

Route 460 Location Study

NOISE ANALYSIS TECHNICAL REPORT



May 2005

TABLE OF CONTENTS

1.0	INTRODUCTION.....	3
2.0	NOISE TERMINOLOGY AND CRITERIA	5
3.0	EXISTING NOISE CONDITIONS	7
4.0	MODELING AND PROJECTIONS	9
4.1	HIGHWAY NOISE COMPUTATION MODEL	9
4.2	TRAFFIC DATA FOR NOISE COMPUTATIONS	9
4.3	COMPUTED EXISTING AND FUTURE NOISE LEVELS	10
5.0	NOISE IMPACT ASSESSMENT	11
5.1	IMPACT SUMMARIES	11
5.2	NOISE CONTOURS	13
6.0	NOISE ABATEMENT	15
7.0	CONSTRUCTION NOISE	17

LIST OF TABLES

Table 2-1	FHWA NOISE ABATEMENT CRITERIA.....	5
Table 3-1	MEASURED EXISTING NOISE LEVELS	7
Table 5-1	SUMMARY OF NOISE IMPACT	12
Table 5-2	CBA 1 NOISE CONTOURS	13
Table 5-3	CBA 2 NOISE CONTOURS	14
Table 5-4	CBA 3 NOISE CONTOURS	14
Table 6-1	NOISE BARRIER SUMMARY	16

LIST OF FIGURES

Figure 1-1	CANDIDATE BUILD ALTERNATIVES	4
Figure 3-1	AMBIENT NOISE MEASUREMENT LOCATIONS	8

EXECUTIVE SUMMARY

Traffic noise impact associated with the Route 460 Corridor project between Interstate 295 in Prince George County and the Suffolk Bypass (Route 58) in Suffolk, Virginia has been assessed in accordance with procedures and criteria approved by the Federal Highway Administration (FHWA) and the Virginia Department of Transportation (VDOT). The noise analysis involves evaluating three Candidate Build Alternatives, CBA 1, CBA 2 and CBA 3. Figure 1-1 shows overviews of the project alternatives. CBA 1 and CBA 3 are on new location, while CBA 2 follows the existing Route 460 corridor and includes bypasses around existing towns. CBA 1, CBA 3, and the CBA 2 town bypasses will consist of a four lane facility separated by a 40 foot grass median. CBA 2 between the town bypasses will follow existing Route 460 and will include safety and increased mobility improvements.

A comparison of noise impact by alternative indicates that more noise-sensitive properties will be affected by CBA 3 than by CBA 1 or CBA 2. For CBA 3, a total of 182 residential properties and 2 churches will receive noise impact in design year 2026. Two of these 184 properties currently receive noise levels approaching or exceeding FHWA Noise Abatement Criteria. In the 2026 no-build condition three properties will receive noise levels approaching or exceeding FHWA Noise Abatement Criteria.

For CBA 1, a total of 156 residential properties, 1 church, and 1 school will receive noise impact in design year 2026 with CBA 1. None of these properties currently receive noise levels approaching or exceeding FHWA Noise Abatement Criteria. Similarly, in the 2026 no-build condition no properties will receive noise levels approaching or exceeding FHWA Noise Abatement Criteria.

The least number of impacted properties will result with CBA 2. A total of 91 residential properties, 1 church, and 1 school will be impacted. Three of these 93 properties currently receive noise levels approaching or exceeding FHWA Noise Abatement Criteria. In the 2026 no-build condition twenty properties will receive noise levels approaching or exceeding FHWA Noise Abatement Criteria.

Ninety-five percent of all impacted properties will be impacted at least partially as a result of 2026 build noise levels increasing over existing levels by a substantial amount (10 decibels or more).

The construction of noise barriers has been considered at every location where noise impact has been predicted. FHWA and VDOT require that noise barriers be both “feasible” and “reasonable” to be recommended for construction. To be feasible, a barrier must be effective, that is it must reduce noise levels at noise sensitive locations by at least 5 decibels, thereby “protecting” or “benefiting” the property. A residential property is “protected” if it will be exposed to future noise impact and will receive at least 5 decibels of noise reduction from a barrier. By comparison, a residential property is “benefited” if it is not exposed to future noise impact, but will still receive at least 5 decibels of noise reduction from a barrier designed to protect impacted properties.

The noise analysis included a preliminary feasibility evaluation for noise barriers. In locations near impacted properties where roadway access must be maintained, the properties were considered “not protected” (see Table 6-1). Barrier lengths, heights, and locations have been estimated using TNM for all other impacted properties. None of the impacted properties associated with CBA 1 or CBA 3 require road access that would make noise barriers ineffective. However, with CBA 2, eight impacted residential properties will require such access and are listed as “not protected” in Table 6-1. The feasibility of constructing noise barriers will be fully evaluated for those properties impacted by the selected alternative during the design phase of the project.

CBA 3, which is predicted to impact the largest number of noise-sensitive properties, would require the largest number and square footage of noise barriers to provide noise protection to impacted properties. CBA 2, with the least number of impacted properties, would require the least number and square footage of barriers to protect impacted properties.

Barrier reasonableness, which is partially based on cost-effectiveness, has not been fully evaluated in this analysis, since barrier costs cannot accurately be determined during the Location Study stage. However,

preliminary cost estimates were calculated based on estimated barrier length and height. Before the design public hearing, the appropriate barrier costs specific to that location will be determined and barrier cost effectiveness will be evaluated. Costs can include but are not limited to costs for barrier materials and installation, for additional right-of-way to accommodate the barriers, for the resolution of utility and drainage conflicts with the barriers, and for dealing with safety issues created by the barriers. To be "reasonable," a barrier cannot cost more than \$30,000 per protected or benefited residential property. See the Noise Technical Report for a summary of proposed barriers and their approximate cost per protected or benefited residential property. A barrier found not to be reasonable due to cost can still be constructed if a third party (other than FHWA or VDOT) funds the amount above \$30,000 per residential property. The reasonableness determinations for non-residential properties such as schools and churches are made on a case-by-case basis. The determinations are based not only on the barrier cost, but also on the type and duration of the activity taking place, the size of the affected area, the severity of the impact, and the amount of noise reduction provided.

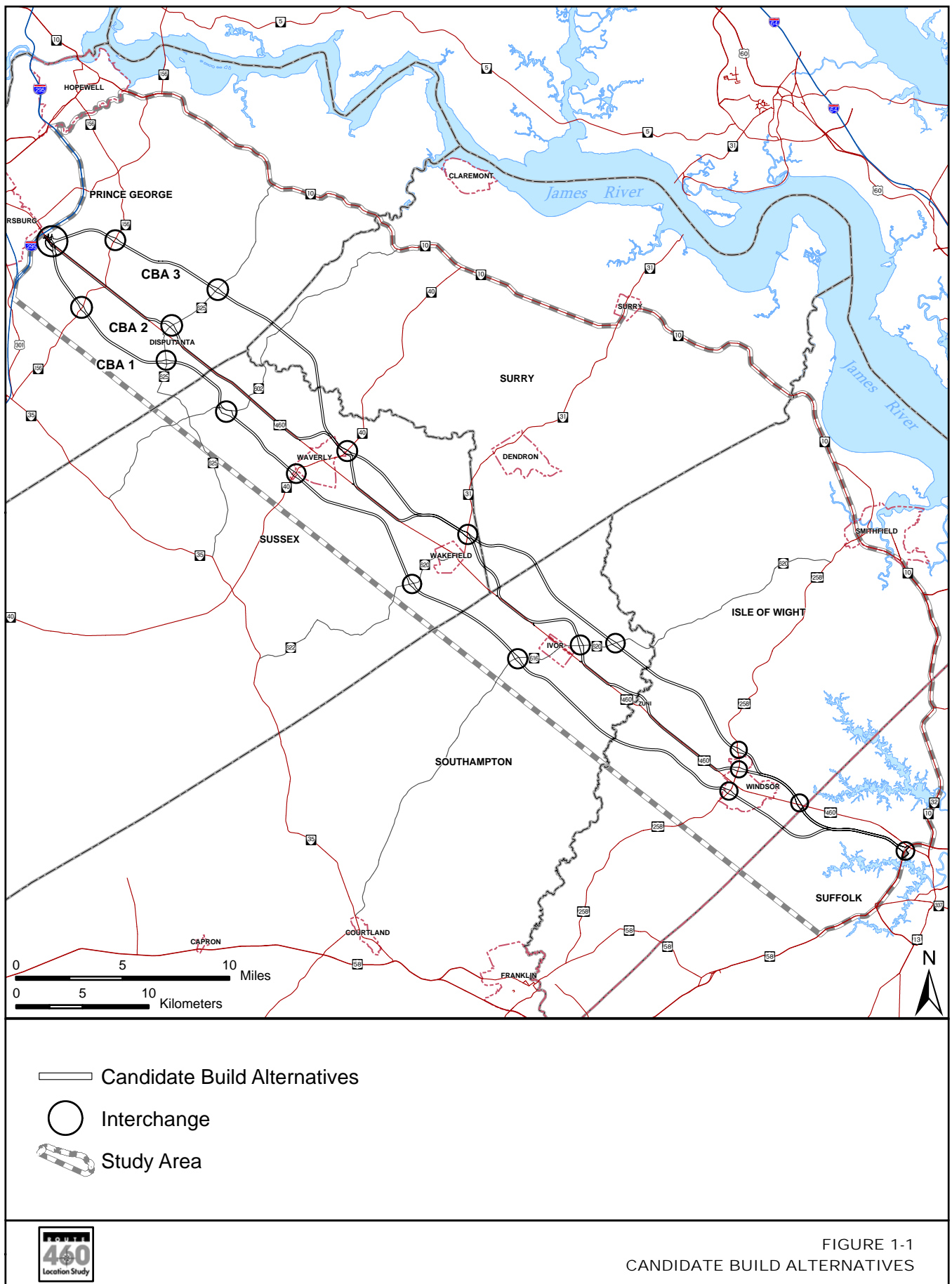
1.0 INTRODUCTION

The objective of this analysis is to assess the potential traffic noise impact associated with the Route 460 Location Study in Prince George, Sussex, Surry, Southampton, and Isle of Wight Counties and the City of Suffolk, Virginia and to evaluate noise abatement measures wherever this impact is expected to occur.

The three CBAs begin at Interstate 295 in Prince George County and end at the Suffolk Bypass (Route 58), a distance of approximately 52 miles. CBA 1 and CBA 3 will be slightly longer than CBA 2 as they are entirely on new location. CBA 2 involves bypasses around the towns and improvements to existing Route 460. CBA 1, CBA 3, and the CBA 2 town bypasses will consist of a four lane facility separated by a 40 foot grass median. CBA 2 between the town bypasses will follow existing Route 460 and will include safety and increased mobility improvements. Figure 1-1 shows overviews of the project alternatives.

This report presents a description of noise terminology, the applicable standards and criteria, a description of the computations of existing and future noise levels, a projection of expected future noise impact, a preliminary investigation of abatement measures in locations where impact is predicted, and a discussion of construction noise.

Appendix A includes the traffic data that was used as input to the noise model. Appendix B includes a listing of all studied properties and their computed noise levels. Appendix C includes tables of existing and future noise levels. Appendix D lists noise barriers under consideration.



2.0 NOISE TERMINOLOGY AND CRITERIA

The potential noise impact related to the proposed Route 460 Location Study project has been assessed in accordance with Federal Highway Administration (FHWA) and Virginia Department of Transportation (VDOT) noise assessment guidelines. The FHWA guidelines are set forth in 23 CFR Part 772 (FHWA, 1982) VDOT's regulations are contained within the State Noise Abatement Policy (VDOT Roads and Bridges Specifications, 2002) and are consistent with the FHWA guidelines.

To determine the degree of impact of highway traffic noise on human activity, the Noise Abatement Criteria (NAC) established by the FHWA regulation have been used (see Table 2-1). The NAC are given in terms of the hourly, A-weighted, equivalent sound level in decibels (dBA). The A-weighted sound level is a single number measure of sound intensity with weighted frequency characteristics that corresponds to human subjective response to noise. Most environmental noise (and the A-weighted sound level) fluctuates from moment to moment, and it is common practice to characterize the fluctuating level by a single number called the equivalent sound level (L_{eq}). The L_{eq} is the value or level of a steady, non-fluctuating sound that represents the same sound energy as the actual time-varying sound evaluated over the same time period. For traffic noise assessment, L_{eq} is typically evaluated over a one-hour period, and may be denoted as $L_{eq}(h)$.

**Table 2-1
FHWA NOISE ABATEMENT CRITERIA**

Activity Category	$L_{eq}(h)^*$	Description of Activity Category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries and hospitals
C	72 (Exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	--	Undeveloped lands.
E	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals and auditoriums.
* Hourly A-weighted Sound Level (dBA)		

Noise-sensitive land uses potentially affected by this project are in Category B and consist of residential properties, churches, and schools. Per FHWA, noise impact occurs when the predicted noise levels in the project area "approach or exceed" the NAC during the loudest hour of the day. As shown in Table 1 above, the applicable NAC for exterior activities in Category B is 67 dBA $L_{eq}(h)$. VDOT defines the word "approach" to mean when the loudest-hour L_{eq} equals 1 dB less than the NAC. Therefore, noise impact occurs when future noise levels equal or exceed 66 dBA $L_{eq}(h)$ for Activity Category B. Noise impact also occurs when predicted noise levels substantially exceed existing noise levels. An increase of 10 decibels or more is considered a Substantial Increase (SI) by VDOT.

For noise sensitive land uses with interior activities such as schools and churches, noise impact has also been evaluated with respect to the FHWA NAC for Activity Category E. Following FHWA guidelines, interior noise levels are computed by subtracting from the computed exterior noise levels the noise

reduction factor of the building structure. For Category E land uses, noise impact occurs wherever the predicted noise levels (interior) during the loudest hour of the day “approach or exceed” 52 dBA L_{eq} (equal or exceed 51 dBA L_{eq}) or exceed existing noise levels by 10 decibels or more.

For Category B or E land uses, wherever noise impact is predicted to occur, consideration of traffic-noise abatement measures is necessary. Noise abatement that will be effective in reducing noise impact will be considered reasonable and feasible unless it is found that such mitigation measures will cause adverse social, economic or environmental effects that outweigh the benefits received. See section 6.2 for further information regarding the determination of feasibility.

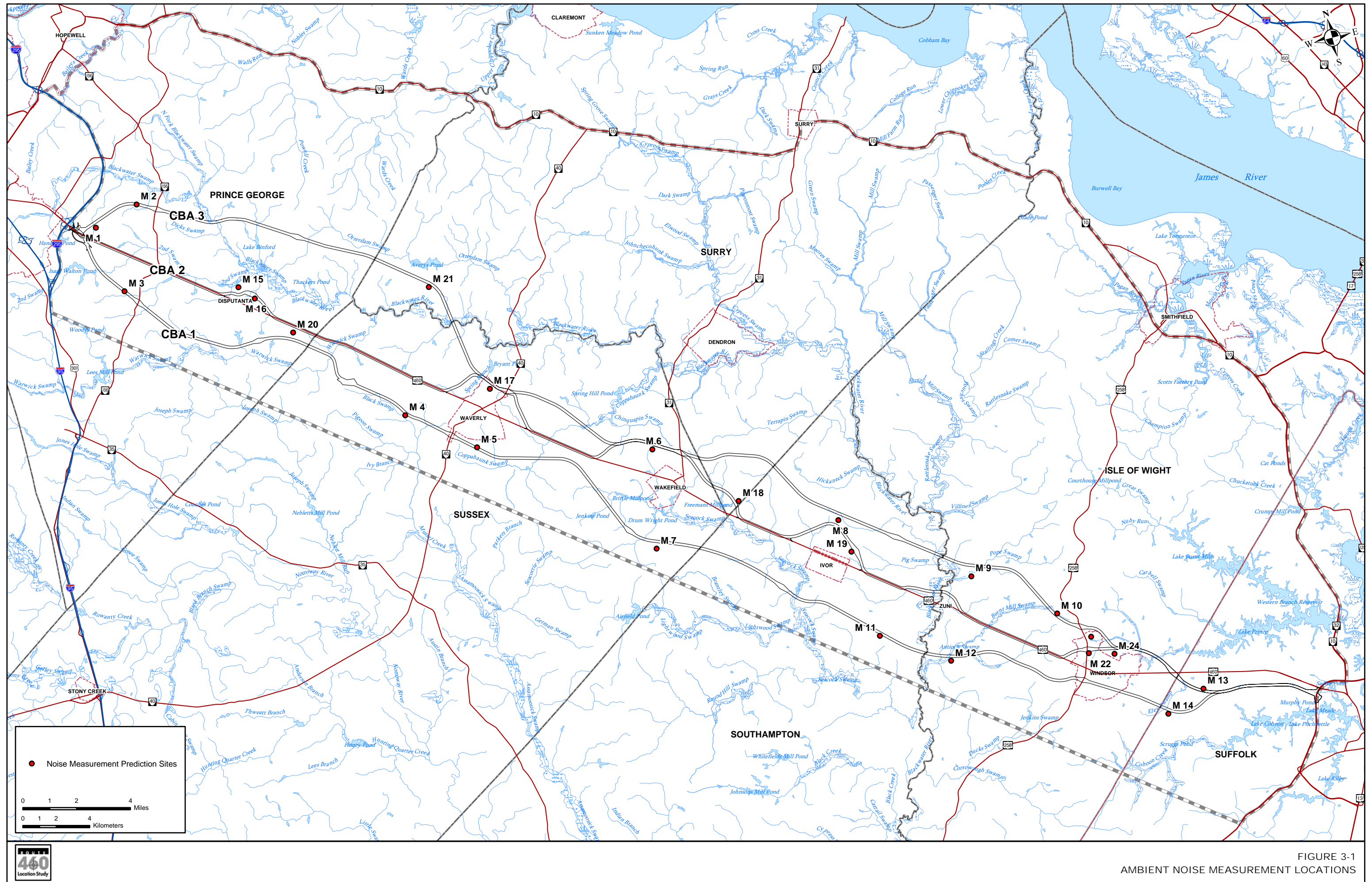
Noise levels in the project study area have been determined for the existing conditions and the design-year (2026) build conditions. No-build traffic data was only available for existing Route 460 and other primary routes with ADTs greater than 1000, and therefore, 2026 no-build noise levels could not be determined for most noise-sensitive properties. See Section 4, Noise Modeling and Projections, for further explanation.

3.0 EXISTING NOISE CONDITIONS

During July and August 2004, noise measurements and a land use assessment were conducted within the study area. Short-term noise measurements of 20-minutes duration each were conducted at twenty-four (24) locations throughout the area using a Bruel & Kjaer Model 2230 precision integrating sound level meter. Most of the measurements were taken during off-peak traffic periods and were affected by non-traffic sources such as distant planes and trains, wind, birds, insects, air-conditioning units, distant talking and dog barking, and other typical residential sources. The measured noise levels, included in Table 3-1 and expressed as equivalent sound levels (L_{eq}), range from 40 dBA to 57 dBA. The measurement locations are shown in Figure 3-1.

**Table 3-1
MEASURED EXISTING NOISE LEVELS**

Alternative	Site Number	Name	Date	Start Time	Leq Traffic Only
CBA 3	M1	5280 West Quaker Road, Route 629	7/21/2004	9:21 AM	50
CBA3	M2	8800 Bowbridge Road (off Rt 629)	7/21/2004	10:04 AM	44
CBA1	M3	11797 Continental Forest Drive	7/21/2004	12:00 PM	41
CBA1	M4	5298 Beef Stake, Route 626	7/22/2004	10:34 AM	43
CBA1	M5	7299 Coppahank Road, Route 654	7/22/2004	11:35 AM	42
CBA2&3	M6	9246 Springhill Road	7/22/2004	1:03 PM	40
CBA1	M7	13120 Courtland Road, Route 628	7/22/2004	2:50 PM	53
CBA3	M8	6413 Proctors Bridge Road, Route 616	7/28/2004	10:28 AM	46
CBA3	M9	7062 Dodge Lane, (off Rt 649)	7/28/2004	11:57 AM	42
CBA3	M10	Qual Hollow Lane, Clydesdale Mobile Park, (Rt 638/Rt 258)	7/28/2004	2:38 PM	48
CBA1	M11	36482 Seacock Chapel Road, Route 614	7/29/2004	9:58 AM	47
CBA1	M12	Rt 614 Thomas Woods Trail - Presbyterian Homes and Family Services, Inc.	7/29/2004	1:00 PM	41
CBA 2&3	M13	5466 Old Myrtle Road, Route 632	7/30/2004	1:15 PM	50
CBA1	M14	4412 Old Mill Road, Route 607	7/30/2004	2:04 PM	44
CBA2	M15	12900 West Quaker Road - Harrison Elementary School	8/24/2004	10:33 AM	51
CBA2	M16	10320 County Drive	8/24/2004	11:33 AM	48
CBA2&3	M17	543 Jasper Road	8/24/2004	12:47 PM	45
CBA2	M18	571 Freeman Pond Road, Route 639	8/24/2004	3:26 PM	40
CBA2	M19	36361 Broadwater Road, Route 620	8/24/2004	4:31 PM	57
CBA1&2	M20	15150 Alden Road, Route 620	8/25/2004	9:19 AM	52
CBA3	M21	3195 Laurel Drive, Route 601	8/25/2004	10:17 AM	40
CBA2	M22	23320 North Court Street - Windsor Middle School	8/25/2004	12:35 PM	51
CBA2	M23	10401 Courthouse Road - Twin Ponds Trailer Court - Beale Street	8/25/2004	2:21 PM	50
CBA2&3	M24	23366 Deer Path Trail, Route 600	8/25/2004	3:16 PM	49



4.0 MODELING AND PROJECTIONS

4.1 HIGHWAY NOISE COMPUTATION MODEL

Traffic noise levels were approximated at all noise-sensitive properties along the three candidate build alternatives using the latest versions of the FHWA Traffic Noise Model (TNM 2.5)^[3] and the TNM 2.5 Look Up Tables. As a result of the long corridor, the number of noise-sensitive properties involved, the lack of elevation data, and the only available mapping being in PDF format, it was decided to use a two-dimensional approach. Using loudest hour design year 2026 traffic data for the CBAs and ten percent of design year ADTs for other primary roadways and secondary roadways, build case noise levels at various distances from the build alternatives and other roadways were calculated. The distances from the build alternatives and other roadways to all noise sensitive properties were approximated and the applicable noise levels were applied to each property. The properties, identified as noise sensitive during the land use survey conducted in July and August 2004, include residential properties and several churches and schools. Most of the residential properties are single-family, but the study area also contains mobile home parks and apartment complexes. In accordance with FHWA and VDOT policies, noise-sensitive properties beyond 1000 feet from the build alternatives were not included in this process.

Existing noise levels were approximated in a similar manner, using ten percent of existing ADTs for primary and secondary roadways to calculate noise levels at various distances from the roadways. No-build traffic data was available only for existing Route 460 and other primary routes with ADTs greater than 1,000, and therefore, 2026 no-build noise levels could not be determined for most noise-sensitive properties using traffic projections. However, at those properties where the existing noise levels were approximated to be 66 dBA or greater, no-build levels were also assumed to equal or be greater than 66 dBA. Properties where existing levels reach 66 dBA or higher are in close proximity to existing roadways, and traffic on these roadways has been assumed to be at least the same in 2026 as it was in 2003.

4.2 TRAFFIC DATA FOR NOISE COMPUTATIONS

Traffic data for this analysis included 2003 hourly volumes including vehicle mix for existing Route 460 and 2026 Average Daily Traffic (ADT) volumes for the CBAs. Design year ADTs were also provided for other primary roads in the study area as well as for those secondary roads whose daily volumes were greater than 1,000. This data was supplemented by 2003 ADTs for primary and secondary roads in the study area obtained from the VDOT website. Truck data was only available for existing Route 460 and was also used for the CBAs. For all secondary roads with ADTs under 4,000, one percent of the traffic volumes was considered to be medium trucks (vehicles with 2 axles and 6 tires) and another one percent was considered to be heavy trucks (vehicles with 3 or more axles). For secondary roads with ADTs of 4,000 and above and for all primary roads other than Route 460 and Route 258, two percent of traffic volumes were assumed to be trucks. For Route 258, three percent of traffic was assumed to be trucks. Vehicle operating speeds of 55 mph were used for existing Route 460 and the CBAs and speeds of 45 mph were used for all other roadways.

The noise analysis was performed for the loudest hour of the day. These traffic conditions approximate those for the loudest hour of the day due to the combination of both relatively high volumes (of total vehicles and of heavy trucks) and speeds. The loudest hour for existing Route 460 was determined from the 2003 hourly data (did not include operating speeds) and the percentages for that hour (% of ADT and % vehicle types) were applied to the 2026 ADTs for the CBAs. For all other roads in the study area, ten percent of the individual ADTs was used to represent the loudest hour.

Appendix A provides a summary of the 2026 traffic data for the CBAs used in the noise analysis.

4.3 COMPUTED EXISTING AND FUTURE NOISE LEVELS

A table for each CBA containing existing and 2026 build noise levels is included in Appendix C. Not included in the tables are 2025 no-build noise levels which could only be computed at those properties adjacent to high volume roadways. (See 4.1). The tables also include the address (if known) or location (road and station number) for each noise-sensitive property included in the analysis.

5.0 NOISE IMPACT ASSESSMENT

5.1 IMPACT SUMMARIES

The potential noise impact of the CBAs was assessed in accordance with FHWA and VDOT noise assessment guidelines, which are described in detail in Sections 2 and 4.

In the following table and discussion, noise impact is summarized for three separate categories. “Approach or Exceed NAC Only” impact, or “NAC” impact occurs where project noise levels approach or exceed the FHWA Noise Abatement Criteria (see Section 2), but the increase above existing is less than 10 dB. “Substantial Increase Only” impact, or “SI” impact, occurs where the project alternative causes a substantial increase in the existing noise level – 10 dB or more – but the future level is less than 66 dBA L_{eq} . “Both” impact, or “Both NAC and Substantial Increase” impact occurs where both conditions exist; i.e. a 10 dB or more increase above the existing noise level and the predicted future noise levels approach or exceed 67 dBA L_{eq} .

Table 5-1 provides a summary of the noise impact throughout the study corridor for each candidate build alternative by impact category. Impact in areas where noise levels approach or exceed the NAC have also been tabulated for the 2003 existing condition and 2026 No-build alternative in the same study corridor as traversed by the associated build alternative. Properties displaced by proposed roadway improvements (whether new alignment or widening) were not included in the count of impacted properties for the build condition.

A comparison of noise impact by alternative indicates that more noise-sensitive properties will be affected by Alternative 3 than by Alternative 1 or Alternative 2. A total of 182 residential properties and 2 churches will receive noise impact in design year 2026 with Alternative 3. 162 of these residences and 1 church will receive SI impact only, while only 2 residences and the other church will be impacted only by noise levels approaching or exceeding the NAC. 18 of the residential properties will experience both types of impact. Two of these 184 properties do currently and three will under the 2026 no-build condition receive noise levels approaching or exceeding FHWA Noise Abatement Criteria.

A total of 156 residential properties, 1 church, and 1 school will receive noise impact in design year 2026 with Alternative 1. All of these properties will be impacted as a result of substantial increases in noise levels, and 32 will also experience noise levels approaching or exceeding 67 dBA L_{eq} . None of these properties are currently or will under the 2026 no-build condition receive noise levels approaching or exceeding FHWA Noise Abatement Criteria.

The least number of impacted properties will result with Alternative 2. A total of 91 residential properties, 1 church, and 1 school will be impacted, with 71 residences and the school receiving only a substantial increase impact, and 16 residences and the church receiving only a NAC impact. Four of the residences will receive both types of impact. Three of these 93 properties do currently and twenty will under the 2026 no-build condition receive noise levels approaching or exceeding FHWA Noise Abatement Criteria.

The tables in Appendix C that list the computed existing and 2026 build noise levels for each noise sensitive property included in the analysis also contain the impact category for each property.

**Table 5-1
SUMMARY OF NOISE IMPACT**

Table Summary Noise Impact Totals				
CBA 1				
Impact	Approach or Exceed NAC Only “NAC”	Substantial Increase Only “SI”	Both NAC and Substantial Increase “Both”	TOTAL
	None	124 Residences 1 Church 1 School	32 Residences	156 Residences 1 Church 1 School
Existing	None	NA	NA	None
No-build	None	NA	NA	None
CBA 2				
Impact	Approach or Exceed NAC Only “NAC”	Substantial Increase Only “SI”	Both NAC and Substantial Increase “Both”	TOTAL
	16 Residences 1 Church	71 Residences 1 School	4 Residences	91 Residences 1 Church 1 School
Existing	3 Residences	NA	NA	3 Residences
No-build	20 Residences	NA	NA	20 residences
CBA 3				
Impact	Approach or Exceed NAC Only “NAC”	Substantial Increase Only “SI”	Both NAC and Substantial Increase “Both”	TOTAL
	2 Residences 1 Church	162 Residences 1 Church	18 Residences	182 Residences 2 Churches
Existing	2 Residences	NA	NA	2 Residences
No-build	3 Residences	NA	NA	3 Residences

5.2 NOISE CONTOURS

Noise contours are lines of equal noise exposure that parallel the roadway noise source, and diminish in intensity with distance. Noise contours can be used to assist local planning offices in designing noise compatible land uses, and for this noise analysis were used to help approximate design year 2026 noise levels at noise sensitive properties within the study area. Table 5-2, Table 5-3 and Table 5-4 show the perpendicular distances between the roadway centerline and the 66 dBA noise contour as well as other noise level contours for each CBA .

**Table 5-2
CBA 1 NOISE CONTOURS**

CBA 1 66 dBA AND OTHER NOISE LEVEL CONTOURS: Distance From Centerline of Alternative			
Location	DY 2026 Noise Level Contour Distances (Feet)		
	66 dBA	60 dBA	55 dBA
I-295 to Rte 156	220	450	800
Rte 156 to Rte 625	215	430	750
Rte 625 to Rte 602	218	435	760
Rte 602 to Rte 40	218	435	760
Rte 40 to Rte 31	209	420	740
Rte 31 to Rte 616	209	425	745
Rte 616 to Rte 258	216	435	760
Rte 258 to IWSuf	245	488	840
IW/Suf to Rte 58	190	370	660

* Noise contours in this table account for CBA 1 traffic-related noise only.

**Table 5-3
CBA 2 NOISE CONTOURS**

CBA 2 66 dBA AND OTHER NOISE LEVEL CONTOURS From Centerline of Alternative			
Location	DY 2026 Noise Level Contour Distances (Feet)		
	66 dBA	60 dBA	55 dBA
Disputanta Bypass	175	358	640
Waverly Bypass	170	350	630
Wakefield Bypass	175	360	640
Ivor Bypass	183	375	670
Zuni Bypass	177	365	650
Windsor Bypass	197	400	710
Rte 258 to IW/Suf	197	400	710
IW/Suf to Rte 58	177	345	620

* Noise contours in this table account for CBA 2 traffic-related noise only.

**Table 5-4
CBA 3 NOISE CONTOURS**

CBA 3 66 dBA AND OTHER NOISE LEVEL CONTOURS From Centerline of Alternative			
Location	DY 2026 Noise Level Contour Distances (Feet)		
	66 dBA	60 dBA	55 dBA
I-295 to Rte 156	202	410	716
Rte 156 to Rte 625	204	413	725
Rte 625 to Rte 602	204	413	725
Rte 602 to Rte 40	199	400	710
Rte 40 to Rte 31	214	435	758
Rte 31 to Rte 616	218	440	765
Rte 616 to Rte 258	218	440	765
Rte 258 to IW/Suf	220	445	770
IW/Suf to Rte 58	195	380	675

* Noise contours in this table account for CBA 3 traffic-related noise only.

6.0 NOISE ABATEMENT

FHWA Policy requires that noise abatement measures be considered wherever noise impact is predicted to occur. Measures identified by FHWA for consideration include traffic management, alteration of horizontal and vertical alignment, and construction of noise barriers.

6.1 Alternative Noise Abatement Measures

Traffic management measures, which include speed reductions and truck restrictions, would compromise one of the main purposes of this project and have been eliminated from further consideration. Alignment shifts could be effective in reducing noise levels at some locations but could also create additional noise impact and result in additional property takings. Further consideration of this abatement measure cannot take place until elevation contours become available.

6.2 Noise Barriers

The construction of noise barriers has been considered at every location where noise impact has been predicted. FHWA and VDOT require that noise barriers be both “feasible” and “reasonable” to be recommended for construction.

To be feasible, a barrier must be effective, that is it must reduce noise levels at noise sensitive locations by at least 5 decibels, thereby “protecting” or “benefiting” the property. A residential property is “protected” if it will be exposed to future noise impact and will receive at least 5 decibels of noise reduction from a barrier. By comparison, a residential property is “benefited” if it is not exposed to future noise impact, but will still receive at least 5 decibels of noise reduction from a barrier designed to protect impacted properties. A preliminary feasibility evaluation, normally conducted at the Location Study stage of a project, is not possible in a two-dimensional analysis. Therefore, only those impacted properties, where roadway access must be maintained such that noise barriers will be ineffective, have been considered as “not protected” in Table 7. Barrier lengths, heights, and locations have been estimated using TNM for all other impacted properties. The feasibility of constructing noise barriers will be fully evaluated for those properties impacted by the selected alternative during the analysis for the FEIS.

Barrier reasonableness, which is partially based on cost-effectiveness, has not been fully evaluated in this analysis, since barrier costs cannot accurately be determined during the Location Study stage. However, preliminary cost estimates were calculated based on estimated barrier length and height. Before the design public hearing, the appropriate barrier costs specific to that location will be determined and barrier cost effectiveness will be evaluated. Costs can include but are not limited to costs for barrier materials and installation, for additional right-of-way to accommodate the barriers, for the resolution of utility and drainage conflicts with the barriers, and for dealing with safety issues created by the barriers. To be “reasonable,” a barrier cannot cost more than \$30,000 per protected or benefited residential property. A barrier found not to be reasonable due to cost can still be constructed if a third party (other than FHWA or VDOT) funds the amount above \$30,000 per residential property. The reasonableness determinations for non-residential properties such as schools and churches are made on a case-by-case basis. The determinations are based not only on the barrier cost, but also on the type and duration of the activity taking place, the size of the affected area, the severity of the impact, and the amount of noise reduction provided.

CBA 3, which is predicted to impact the largest number of noise-sensitive properties, would require the largest number and square footage of noise barriers to provide noise protection to impacted properties. CBA 2, with the least number of impacted properties, would require the least number and square footage of barriers to protect impacted properties.

Appendix D includes a table of individual barriers for each of the three CBAs. Table 6-1 provides a summary of these barriers. Included are the number of barriers, the total length and surface area, and a very preliminary total cost for barrier materials and installation.

**Table 6-1
NOISE BARRIER SUMMARY**

CBA	Number of Barriers	Total Linear Feet	Total Square Feet	Total Cost	Sites Protected	Feasible Barriers	Cost-Effective Barriers
CBA 1	51 Barriers	103,150	1,451,550	\$30,482,550	156 Residences 1 Church 1 School	All	None
CBA 2	40 Barriers	37,650	562,100	\$11,804,100	83 Residences 1 Church 1 School 8 Sites Not Protected	All (8 sites not protected)	None
CBA 3	63 Barriers	110,250	1,628,490	\$34,198,290	182 Residences 2 Churches	All	None

Note: All results in this table have been based on preliminary noise analysis and design, and may change upon detailed analyses. The cost-effectiveness of barriers protecting churches and schools are based on cost and other factors as discussed in Section 4.9.3.

7.0 CONSTRUCTION NOISE

An increase in project area noise levels will occur during the construction of the proposed project. Construction noise differs from that generated by normal traffic due to differences in the spectral and temporal characteristics of the noise. The degree of noise impact during construction will be a function of the number and types of equipment being used, and the distances between the construction equipment and the noise-sensitive areas.

Generally, construction activity will occur during normal working hours on weekdays. Therefore, noise impact experienced by local residents as a result of construction activities should not occur during sleeping hours. Some impact will occur in the project vicinity where outdoor recreation takes place during normal working hours.

A number of measures can be utilized in order to minimize noise resulting from construction activities. Such measures include, but are not limited to, the following:

- Equip any internal combustion engine used for any purpose on or related to the job with a properly operating muffler;
- Conduct truck loading, unloading and hauling so that noise is kept to a minimum;
- Route construction equipment and vehicles in areas that will cause the least disturbance to nearby receptors where possible; and
- Place continuously operated diesel-powered equipment, such as compressors and generators, in areas as far as possible from or shielded from noise-sensitive locations.
- Wherever possible, noise barriers to be constructed as part of the project will be constructed as soon as possible to allow the barriers to protect noise-sensitive areas from construction noise.

The VDOT has developed a specification concerning construction noise that is applicable to this project. In summary, the specification requires the Contractor to limit construction noise levels to 80 decibels in noise-sensitive areas adjacent to the project area. Further, VDOT may monitor construction noise and require noise abatement where exterior noise levels from construction operations exceed 80 decibels. Also, VDOT may prohibit or restrict work that produces objectionable noise between 10 P.M. and 6 A.M. Construction equipment cannot be altered such that noise levels will be greater than that of the original equipment. These provisions are contained in Section 107.14(b) 3 Noise (VDOT, 2002) and are reproduced below:

- "The Contractor's operations shall be performed so that exterior noise levels measured during a noise-sensitive activity shall be not more than 80 decibels. Noise sensitive activity is any activity for which lowered noise levels are essential if the activity is to serve its intended purpose. Such activities include, but are not limited to, those associated with residences, hospitals, nursing homes, churches, schools, libraries, parks, and recreational areas."
- "The Department may monitor construction-related noise. If construction noise levels exceed 80 decibels, the Contractor shall take corrective action before proceeding with operations. The Contractor shall be responsible for costs associated with the abatement of construction noise and the delay of operations attributable to noncompliance with these requirements."
- "The Department may prohibit or restrict to certain portions of the project any work that produces objectionable noise between 10 P.M. and 6 A.M. If other hours are established by local ordinance, the local ordinance shall govern."
- "Equipment shall in no way be altered so as to result in noise levels that are greater than those produced by the original equipment."
- "When feasible, the Contractor shall establish haul routes that direct his vehicles away from developed areas and ensure that noise from hauling operations is kept to a minimum."

- “These requirements are not applicable if the noise produced by sources other than the Contractor’s operation at the point of reception is greater than the noise from the Contractor’s operation at the same point.”

REFERENCES

Federal Highway Administration, "23 CFR Part 772: Procedures for Abatement of Highway Traffic Noise and Construction Noise -- Final Rule. "Federal Register, Vol. 47, No. 131, 8 July 1982.

Virginia Department of Transportation, State Noise Abatement Policy, January 1, 1997.

Menge, Christopher W., Christopher F. Rossano, Grant S. Anderson, Christopher J. Bajdek, FHWA Traffic Noise Model, Version 1.0: Technical Manual. Report No. FHWA-PD-96-010 and DOT-VNTSC-FHWA-98-2. Cambridge, MA: U.S. Department of Transportation, Research and Special Programs Administration, John A. Volpe National Transportation Systems Center, Acoustics Facility, February 1998.

Virginia Department of Transportation, Road and Bridge Specifications, Section 107.14(b) 3 Noise, 2002.

APPENDIX A.

DESIGN YEAR 2026 TRAFFIC DATA USED IN NOISE ANALYSIS

DESIGN YEAR 2026 TRAFFIC DATA USED IN NOISE ANALYSIS

CBA 1						
Description	ADT	Volume	Autos	MT	HT	Speed
I-295 to Rte 156	35800	2291	1581	183	527	55
Rte 156 to Rt 625	33300	2131	1471	170	490	55
Rte 625 to Rt 602	34400	2202	1519	176	506	55
Rte 602 to Rt 40	34300	2195	1515	176	505	55
Rte 40 to Rt 31	30600	1867	1251	131	485	55
Rte 31 to Rt 616	31000	1891	1267	132	492	55
Rte 616 to Rt 258	32500	1983	1328	139	515	55
Rte 258 to IW/Suf	40300	2458	1647	172	639	55
IW/Suf to Rte 58	40200	3256	2735	228	293	55

CBA 2						
Description	ADT	Volume	Autos	MT	HT	Speed
I-295 to Rte 156	22600	1446	998	116	333	55
Rte 156 to Rt 625	24600	1574	1086	126	362	55
Disputanta Bypass	23300	1491	1029	119	343	55
Rte 625 to Rt 602	17900	1146	790	92	263	55
Rte 602 to Rt 40	17100	1094	755	88	252	55
Waverly Bypass	21300	1299	871	91	338	55
Rte 40 to Rt 31	20700	1263	846	88	328	55
Wakefield Bypass	22300	1360	911	95	354	55
Rte 31 to Rt 616	19600	1196	801	84	311	55
Ivor Bypass	24400	1488	997	104	387	55
Rte 616 to SHPIW	18900	1153	772	81	300	55
Zuni Bypass	23000	1403	940	98	365	55
SHP/IW to Rte 258	18900	1153	772	81	300	55
Windsor Bypass	27700	1690	1132	118	439	55
Rte 258 to IWSuf	27700	1690	1132	118	439	55
IW/Suf to Rte 58	35400	2867	2409	201	258	55

CBA 3						
Description	ADT	Volume	Autos	MT	HT	Speed
I-295 to Rte 156	30100	1926	1329	154	443	55
Rte 156 to Rte 625	30700	1965	1356	157	452	55
Rte 625 to Rte 602	30800	1971	1360	158	453	55
Rte 602 to Rte 40	29200	1869	1289	150	430	55
Rte 40 to Rte 31	32100	1958	1312	137	509	55
Rte 31 to Rte 616	33000	2013	1349	141	523	55
Rte 616 to Rte 258	33400	2037	1365	143	530	55
Rte 258 to IW/Suf	33500	2044	1369	143	531	55
IW/Suf to Rte 58	42700	3459	2905	242	311	55

APPENDIX B.

EXISTING TRAFFIC DATA USED IN NOISE ANALYSIS

EXISTING TRAFFIC DATA USED IN NOISE ANALYSIS					
Locality	Route No.	Road Name	From	To	ADT
Pr. George	625	Arwood Road	619	630	910
Pr. George	625	Arwood Road	630	460	1100
Pr. George	625	Hines Road	460	613	720
Pr. George	625	Hines Road	613	611	320
Pr. George	629	Rives Road	ECL Petersburg	630	4600
Pr. George	629	Rives Road	630	460	2500
Pr. George	629	West Quaker Road	460	156	1200
Pr. George	629	East Quaker Road	156	635	750
Pr. George	629	East Quaker Road	635	618	250
Pr. George	630	Golf Course Drive	625	618	530
Pr. George	630	Golf Course Drive	618	627	320
Pr. George	630	Golf Course Drive	627	156	1500
Pr. George	630	Lamore Drive	156	649	1700
Pr. George	630	Lamore Drive	649	629	3500
Pr. George	630	Bull Hill Road	629	460	3000
Pr. George	630	Bull Hill Road	460	106	1600
Pr. George	649	Walton Lake Road	630	1010	2200
Pr. George	156	Prince George Drive	626	460	2300
Pr. George	156	Prince George Drive	460	106	4600
Pr. George	618	Robin Road	627	460	340
Pr. George	618	East Quaker Road	460	629	200
Pr. George	618	Hitchcock Road	629	632	190
Pr. George	635	Centennial Road	629	695	190
Pr. George	695	Easy Street	635	618	160
Pr. George	613	Webb Road	625	601	340
Pr. George	613	Webb Road	601	Sussex CL	140
Pr. George	627	Pumphouse Drive	618	630	580
Pr. George	626	Thweatt Drive	156	627	680
Pr. George	703	Binford Drive	618	Dead End	60
Pr. George	601	Centerville Road	Surry CL	613	140
Pr. George	601	Alden Road	613	460	100
Pr. George	624	Alden Road	Sussex CL	460	100
Pr. George	460	County Drive	I-195	629	15000
Pr. George	460	County Drive	629	156	15000
Pr. George	460	County Drive	156	Sussex CL	16000
Sussex	40	Sussex Drive	Homeville	651	2100
Sussex	40	Main Street	651	460	4700
Sussex	40	Main Street	460	ECL Waverly	3000
Sussex	40	Sussex Drive	ECL Waverly	Surry CL	3000
Sussex	602	Laurel Springs Road	Surry CL	613	150
Sussex	602	Laurel Springs Road	13	460	250
Sussex	602	Cabin Point Road	460	626	1300
Sussex	602	Cabin Point Road	626	625	990
Sussex	624	Warwick Road	Pr George CL	602	20
Sussex	613	Petersburg Road	Pr George CL	653	110
Sussex	613	Petersburg Road	653	606	110
Sussex	626	Beef Steak Road	625	602	170
Sussex	651	Lobbs Shop Road	626	WCL Waverly	560
Sussex	615	George Town Road	40	614	300
Sussex	614	Walnut Hill Road	606	460	80
Sussex	614	Walnut Hill Road	460	615	230
Sussex	614	Walnut Hill Road	615	603	100
Sussex	653	Spring Branch Road	613	NCL Waverly	280
Sussex	621	Harrell Mill Road	654	606	30
Sussex	621	Harrell Mill Road	606	604	60

EXISTING TRAFFIC DATA USED IN NOISE ANALYSIS					
Locality	Route No.	Road Name	From	To	ADT
Sussex	621	Harrell Mill Road	604	620	180
Sussex	604	Chinquapin Road	621	460	130
Sussex	604	Owens Grove Road	460	Surry CL	610
Sussex	615	George Town Road	614	700	170
Sussex	615	Old Wakefield Road	700	604	260
Sussex	615	Old Wakefield Road	604	603	140
Sussex	654	Coppahaunk	655	Waverly	110
Sussex	606	Beaver Dam Road	Waverly	613	360
Sussex	606	Beaver Dam Road	40	460	740
Sussex	606	Beaver Dam Road	460	653	930
Sussex	606	Beaver Dam Road	653	614	590
Sussex	606	Beaver Dam Road	614	622	310
Sussex	460	General Mahone Hwy	Pr George CL	WCL Waverly	12000
Sussex	460	General Mahone Hwy	WCL Waverly	40	12000
Sussex	460	General Mahone Hwy	40	WCL Wakefield	9500
Sussex	460	General Mahone Hwy	Wakefield	Southampton	9500
Sussex	603	Old Wakefield Road	604	615	300
Sussex	603	Old Wakefield Road	615	Wakefield CL	240
Sussex	617	Rocky Hock Road	Surry CL	31	640
Sussex	31	Branch Island Road	460	NCL Wakefield	3300
Sussex	31	Branch Island Road	NCL Wakefield	Surry CL	3300
Sussex	620	Brittles Mill Road	622	621	180
Sussex	620	Brittles Mill Road	621	Wakefield	330
Sussex	628	Courtland Road	Southampton	Wakefield	630
Sussex	600	Green Level Road	628	Southampton	90
Surry	601	Centerville Road	Pr George CL	602	310
Surry	602	Laurel Springs Road	Sussex CL	601	120
Surry	602	Laurel Springs Road	601	608	160
Surry	601	Laurel Drive	602	607	120
Surry	617	White Marsh Road	Sussex CL	629	530
Surry	624	Southampton Road	617	Southampton	210
Southampton	600	Boothe Road	Sussex CL	616	130
Southampton	600	Doles Road	616	635	90
Southampton	622	Bell Road	618	WCL Ivor	90
Southampton	622	Bell Road	WCL Ivor	616	360
Southampton	622	New Road	616	635	520
Southampton	635	Tucker Swamp Road	620	460	320
Southampton	635	Tucker Swamp Road	460	614	410
Southampton	635	Tucker Swamp Road	614	603	380
Southampton	618	Sadler Road	616	600	370
Southampton	618	Sadler Road	600	460	440
Southampton	618	Crumpler Road	460	617	270
Southampton	618	Crumpler Road	617	624	220
Southampton	618	Crumpler Road	624	621	180
Southampton	617	Warrique Road	618	616	320
Southampton	617	Warrique Road	616	620	200
Southampton	616	Ivor Road	605	600	1100
Southampton	616	Main Street	600	SCL Ivor	1200
Southampton	616	Main Street	SCL Ivor	460	2400
Southampton	616	Proctors Bridge Road	NCL Ivor	617	470
Southampton	616	Proctors Bridge Road	460	NCL Ivor	640
Southampton	614	Seacock Chapel Road	605	635	470
Southampton	614	Seacock Chapel Road	635	Isle of Wight CL	820
Southampton	460	General Mahone Blvd	Sussex CL	Isle of Wight CL	10000
Southampton	629	Britt Road	619	635	130

EXISTING TRAFFIC DATA USED IN NOISE ANALYSIS					
Locality	Route No.	Road Name	From	To	ADT
Southampton	620	Broadwater Road	Isle of Wight	617	1300
Southampton	620	Broadwater Road	617	635	1500
Southampton	620	Broadwater Road	635	736	1200
Southampton	620	Broadwater Road	736	460	1500
Isle of Wight	644	Fire Tower Road	460	645	460
Isle of Wight	614	Thomas Woods Trail	Southampton CL	603	240
Isle of Wight	645	Yellow Hammer Road	614	460	360
Isle of Wight	645	Yellow Hammer Road	460	644	330
Isle of Wight	645	Fire Tower Road	644	646	330
Isle of Wight	645	Tar Road	646	647	270
Isle of Wight	646	Beale Place Drive	649	644	130
Isle of Wight	646	Garrison Drive	644	638	310
Isle of Wight	645	Tar Road	647	258	110
Isle of Wight	639	Ecella Road	641	460	160
Isle of Wight	639	Winston Drive	460	638	150
Isle of Wight	638	Mill Creek Drive	645	641	350
Isle of Wight	638	Mill Creek Drive	641	460	280
Isle of Wight	649	Tomlin Hill Drive	644	646	230
Isle of Wight	641	Barrett Town Road	603	645	280
Isle of Wight	603	Blackwater Road	641	258	1200
Isle of Wight	640	Willie Roberts Road	609	258	50
Isle of Wight	657	Antioch Cut Thru Road	603	638	280
Isle of Wight	638	Antioch Cut Thru Road	460	606	420
Isle of Wight	638	Clydesdale Drive	606	258	120
Isle of Wight	606	Antioch Cut Thru Road	638	258	560
Isle of Wight	606	Five Forks Road	258	603	450
Isle of Wight	600	Deer Path Trail	606	603	180
Isle of Wight	600	Lovers Lane	603	460	320
Isle of Wight	603	Bank Street	258	Windsor	820
Isle of Wight	603	Church Street	Windsor	460	2300
Isle of Wight	603	Church Street	460	ECL Windsor	1700
Isle of Wight	603	Shiloh Drive	ECL Windsor	606	1100
Isle of Wight	636	Tyler Drive	Windsor	608	430
Isle of Wight	636	Old Suffolk Road	608	607	250
Isle of Wight	636	Old Suffolk Road	607	460	410
Isle of Wight	636	Old Suffolk Road	460	WCL Suffolk	180
Isle of Wight	607	Old Mill Road	636	WCL Suffolk	270
Isle of Wight	690	Ennis Mill Road	460	636	120
Isle of Wight	690	Ennis Mill Road	636	606	150
Isle of Wight	646	Garrison Drive	460	638	310
Isle of Wight	258	Walters Highway	641	Windsor	5200
Isle of Wight	258	Walters Highway	Windsor CL	460	4700
Isle of Wight	258	Courthouse Highway	460	Windsor CL	6400
Isle of Wight	258	Courthouse Highway	Windsor CL	637	4700
Isle of Wight	635	Dunston Drive	610	608	60
Isle of Wight	608	Tyler Drive	636	635	160
Isle of Wight	608	Tyler Drive	635	WCL Suffolk	170
Isle of Wight	610	Buckhorn Drive	460	SCL Windsor	1100
Isle of Wight	610	Buckhorn Drive	Windsor	635	580
Isle of Wight	460	Windsor Blvd.	Southampton	258	10000
Isle of Wight	460	Windsor Blvd.	258	WCL Suffolk	14000
City of Suffolk	607	Old Mill Road	Isle of Wight	644	270
City of Suffolk	632	Old Myrtle Road	Isle of Wight	460	460
City of Suffolk	611	Gardner Lane	460	606	280

EXISTING TRAFFIC DATA USED IN NOISE ANALYSIS					
Locality	Route No.	Road Name	From	To	ADT
City of Suffolk	636	Archers Mill Road	632	737	370
City of Suffolk	736	Joshua Lane	636	634	340
City of Suffolk	604	Lake Prince Drive	605	460	1900
City of Suffolk	605	Providence Road	460	737	1200
City of Suffolk	634	Kings Fork Road	737	604	1100
City of Suffolk	634	Kings Fork Road	604	460	2000
City of Suffolk	634	Kings Fork Road	460	10	2900
City of Suffolk	604	Pitchkettle Road	58	634	1800
City of Suffolk	638	Murphys Mill Road	604	460	220
City of Suffolk	635	Robs Drive	634	460	450
City of Suffolk	635	General Early Drive	460	638	120
City of Suffolk	460	Pruden Blvd.	Isle of Wight	58	14000
City of Suffolk	58	Holland Road	604	460	31000
City of Suffolk	58	Holland Road	460	10	40000

APPENDIX C

TABLES OF EXISTING AND FUTURE NOISE LEVELS

**TABLE C.1
EXISTING AND FUTURE NOISE LEVELS - CBA 1**

Site ID	Station	Loc	Address/Road Name	Distance (feet)	Existing dBA	Build dBA	Noise Impact Type (NAC,SI, Both)
P	113+00	South	4415 County Drive (Rt 460) Sacred Heart Church	350	60 Ext 40 Int	63 Ext 43 Int	
E	139+50	South	9500 Lamore Drive (Rt 630)	250	52	66	Both
F	138+00	South	9400 Lamore Drive (Rt 630)	300	50	64	SI
G	136+00	South	4518 Rives Road (Rt 629)	400	50	62	SI
H	137+00	South	4510 Rives Road (Rt 629)	500	50	60	SI
I	135+00	South	4514 Rives Road (Rt 629)	500	50	60	SI
Q	136+50	North	4815 W. Quaker Road (Rt 629)	900	50	57	
1	161+00	North	9810 Lamore Drive (Rt 630)	200	40	66	Both
R	162+00	South	Stuart Road	600	40	57	SI
2	168+00	North	10104 Lamore Drive (Rt 630)	175	40	66	Both
3	169+00	North	10000 Lamore Drive (Rt 630)	400	50	60	SI
S	171+00	South	Stuart Road	600	40	57	SI
4A	180+00	South	Walton Lake Road (Rt 649)	350	40	62	SI
5	175+00	North	10106 Lamore Drive (Rt 630)	300	50	63	SI
6	185+50	North	10310 Lamore Drive (Rt 630)	500	50	58	
7	187+00	North	10300 Lamore Drive (Rt 630)	350	40	63	SI
9A	195+00	South	Walton Lake Road (Rt 649)	150	40	66	Both
9B	197+00	South	Walton Lake Road (Rt 649)	700	40	56	SI
11A	245+00	South	Red Gate Court (Rt 661)	850	40	53	SI
12A	258+00	South	Red Gate Drive (Rt 661)	700	40	56	SI
12B	268+00	South	Red Gate Drive (Rt 661)	700	40	56	SI
13A	274+50	North	Larchwood Drive	500	40	59	SI
13B	276+50	North	Larchwood Drive	700	40	56	SI
15	280+00	South	5650 Spencer Lane	250	40	65	SI
16	281+50	South	Spencer Lane	650	40	57	SI
14	283+00	North	Larchwood Court	200	40	66	Both
17	288+00	South	Spencer Lane	500	40	59	SI
18A	288+50	North	Larchwood Court	500	40	59	SI
19	291+00	South	Spencer Lane	325	40	64	SI
21	296+00	South	5925 Spencer Lane	200	40	66	Both
22	296+00	North	5980 Spencer Lane	200	40	66	Both
25	302+00	North	12376 Prince George Drive (Rt 156)	200	51	66	Both
26	300+50	North	12266 Prince George Drive (Rt 156)	350	54	63	
26A	302+00	South	Prince George Drive (Rt 156)	250	45	65	SI
28A	313+50	South	Prince George Drive (Rt 156)	350	45	63	SI
28B	418+00	South	Thweatt Drive (Rt 626)	800	40	54	SI
29	486+00	North	8601 Robin Road (Rt 618)	300	50	62	SI
31	475+50	North	8406 Robin Road (Rt 618)	150	40	66	Both
34	566+50	South	15214 Arwood Road (Rt 625)	350	50	62	SI
35	590+00	South	15309 Arwood Road (Rt 625)	150	40	66	Both
M20	635+00	North	15150 Alden Road (Rt 624)	950	52	53	
M20A	637+00	North	15200 Alden Road (Rt 624)	850	52	53	
36	684+00	South	Warwick Road (Rt 624)	150	40	66	Both
37 - M4	915+50	North	5298 Beef Steak Road (Rt 626)	250	45	65	SI
38	916+00	North	5308 Beef Steak Road (Rt 626)	450	45	60	SI
39	934+50	North	Lobbs Shop Road (Rt 651)	700	40	56	SI
40-1	1010+50	North	912 Sussex Drive (Rt 40)	700	54	60	
40-2	1011+00	North	916 Sussex Drive (Rt 40)	500	54	62	
40-3	1011+00	North	922 Sussex Drive (Rt 40)	200	54	67	Both
40-10	1011+50	South	1032 Sussex Drive (Rt 40)	250	54	66	Both
40-11	1012+00	South	1038 Sussex Drive (Rt 40)	400	54	63	

**TABLE C.1
EXISTING AND FUTURE NOISE LEVELS - CBA 1**

Site ID	Station	Loc	Address/Road Name	Distance (feet)	Existing dBA	Build dBA	Noise Impact Type (NAC,SI, Both)
40-12	1012+00	South	1104 Sussex Drive (Rt 40)	500	54	62	
40-13	1012+00	South	1106 Sussex Drive (Rt 40)	600	54	61	
40-14	1012+00	South	1108 Sussex Drive (Rt 40)	700	54	60	
40-15	1012+00	South	1110 Sussex Drive (Rt 40)	800	54	59	
40-16	1012+00	South	1112 Sussex Drive (Rt 40)	900	54	59	
40-17	1015+00	South	1121 Sussex Drive (Rt 40)	900	54	59	
40-18	1014+50	South	1109 Sussex Drive (Rt 40)	700	54	60	
40-19	1014+50	South	1105 Sussex Drive (Rt 40)	500	54	62	
40-20	1014+00	South	1101 Sussex Drive (Rt 40)	200	54	69	Both
40-27	1014+00	North	915 Sussex Drive (Rt 40)	350	54	64	SI
41 - M5	1066+50	North	7299 Coppahaunk Road (Rt 654)	250	45	65	SI
42	1067+00	South	7414 Coppahaunk Road (Rt 654)	500	45	58	SI
46	1131+50	South	8220 Beaver Dam Road (Rt 606)	450	45	59	SI
48-3	1285+00	South	Chinquapin Road (Rt 604)	350	40	62	SI
48-4	1285+00	South	Chinquapin Road (Rt 604)	550	40	58	SI
49-1	1350+50	South	Harrell Mill Road (Rt 621)	200	40	66	Both
49-2	1361+00	South	Harrell Mill Road (Rt 621)	300	40	64	SI
50	1430+00	South	12502 Brittles Mill Road (Rt 620)	600	40	57	SI
51 - M7	1510+00	South	13120 Courtland Road (Rt 628)	350	48	62	SI
52	1696+00	North	7819 Sadler Road (Rt 618)	750	45	55	SI
53	1737+00	North	33247 Boothe Road (Rt 600)	900	40	52	SI
54	1737+50	North	33241 Boothe Road (Rt 600)	550	40	58	SI
55	1766+00	North	9296 Ivor Road (Rt 616)	900	50	54	
58	1850+00	South	10075 Doles Road (Rt 600)	700	45	55	SI
60-1	1836+00	North	Doles Road (Rt 600)	650	40	56	SI
60-2	1843+00	North	Doles Road (Rt 600)	700	45	55	SI
61 - M11	1980+00	South	36482 Seacock Chapel Road (Rt 614) Powerhouse Christian Center	350	47 Ext 40 Int	62 Ext 42 Int	SI Ext Only
62	1978+50	South	36420 Seacock Chapel Road (Rt 614)	700	47	57	SI
63	1981+50	North	37045 Seacock Chapel Road (Rt 614)	200	47	66	Both
64	1982+00	North	37059 Seacock Chapel Road (Rt 614)	400	47	61	SI
65	1983+00	North	37083 Seacock Chapel Road (Rt 614)	600	47	58	SI
66	1985+50	North	37096 Seacock Chapel Road (Rt 614)	650	47	57	SI
67	1986+00	North	37112 Seacock Chapel Road (Rt 614)	800	47	56	
68	1985+00	North	37123 Seacock Chapel Road (Rt 614)	900	47	55	
69	1987+50	North	37132 Seacock Chapel Road (Rt 614)	900	47	55	
72	2007+50	North	11525 Tucker Swamp Road (Rt 635)	1000	50	52	
73	2007+50	North	12020 Tucker Swamp Road (Rt 635)	800	50	56	
74	2014+00	North	12015 Tucker Swamp Road (Rt 635)	1000	40	50	SI
75	2012+00	North	12025 Tucker Swamp Road (Rt 635)	800	43	55	SI
76	2008+00	North	12036 Tucker Swamp Road (Rt 635)	700	50	56	
77	2015+00	North	12085 Tucker Swamp Road (Rt 635)	750	40	55	SI
78	2013+00	North	12069 Tucker Swamp Road (Rt 635)	650	43	56	SI
82	2015+00	South	12173 Tucker Swamp Road (Rt 635)	200	47	66	Both
83	2016+50	South	12195 Tucker Swamp Road (Rt 635)	400	47	60	SI
85	2083+00	North	Sand Pit Road	550	40	59	SI
86	2091+00	North	22011 Old Gum Tree Road	1000	40	50	SI
89	2140+00	North	22160 Thomas Woods Trail (Rt 614)	400	50	60	SI
90	2140+50	North	Thomas Woods Trail (Rt 614)	200	50	66	Both
95	2140+50	South	22242 Thomas Woods Trail (Rt 614)	150	45	66	Both
96	2142+50	South	22309 Thomas Woods Trail (Rt 614)	750	40	55	SI
97	2142+00	South	22331 Thomas Woods Trail (Rt 614)	950	40	53	SI
98 - M12	2133+00	South	Presbyterian Home & Family Ser.	350	45 Ext 40 Int	62 Ext 42 Int	SI Ext Only

**TABLE C.1
EXISTING AND FUTURE NOISE LEVELS - CBA 1**

Site ID	Station	Loc	Address/Road Name	Distance (feet)	Existing dBA	Build dBA	Noise Impact Type (NAC,SI, Both)
103	2161+00	North	6812 Mill Creek Drive (Rt 638)	800	40	55	SI
104	2167+50	North	6824 Mill Creek Drive (Rt 638)	500	40	59	SI
105	2170+00	North	6848 Mill Creek Drive (Rt 638)	500	40	59	SI
106	2172+50	North	6846 Mill Creek Drive (Rt 638)	500	45	59	SI
107	2175+50	North	6847 Mill Creek Drive (Rt 638)	800	40	55	SI
108	2174+50	North	6896 Mill Creek Drive (Rt 638)	350	40	62	SI
111	2178+50	North	6941 Mill Creek Drive (Rt 638)	800	40	55	SI
113	2182+00	North	6960 Mill Creek Drive (Rt 638)	250	43	65	SI
114	2184+00	North	6980 Mill Creek Drive (Rt 638)	250	43	65	SI
115	2182+00	North	6985 Mill Creek Drive (Rt 638)	600	40	58	SI
116	2184+00	North	6987 Mill Creek Drive (Rt 638)	650	40	57	SI
117	2186+00	North	7013 Mill Creek Drive (Rt 638)	700	40	56	SI
118	2188+00	North	7017 Mill Creek Drive (Rt 638)	800	40	55	SI
120	2191+00	North	22223 Hunters Run Lane	150	44	66	Both
121	2191+00	North	22170 Deer Trail	650	40	57	SI
123	2194+00	North	22167 Deer Trail	850	40	54	SI
126	2196+00	North	7101 Mill Creek Drive (Rt 638)	650	40	57	SI
134	2209+00	South	6460 Pressley Way	550	40	58	SI
135	2207+00	South	6468 Pressley Way	650	40	57	SI
138	2215+00	South	7318 Mill Creek Drive (Rt 638)	400	40	61	SI
142	2218+50	North	22321 Barrett Town Road (Rt 641)	250	46	66	Both
143	2215+50	North	22310 Barrett Town Road (Rt 641)	250	46	66	Both
144	2217+00	North	22889 Barrett Town Road (Rt 641)	550	46	59	SI
145	2215+50	North	22288 Barrett Town Road (Rt 641)	500	49	60	SI
146	2223+00	North	7437 Mill Creek Drive (Rt 638)	200	46	66	Both
147	2224+50	North	7445 Mill Creek Drive (Rt 638)	250	45	66	Both
148	2227+00	North	7455 Mill Creek Drive (Rt 638)	150	45	69	Both
152	2230+50	North	7507 Mill Creek Drive (Rt 638)	150	44	66	Both
153	2232+00	North	7523 Mill Creek Drive (Rt 638)	200	44	66	Both
154	2219+00	South	22392 Barrett Town Road (Rt 641)	200	45	66	Both
155	2222+50	South	22472 Barrett Town Road (Rt 641)	750	45	55	SI
156	2223+00	South	22484 Barrett Town Road (Rt 641)	900	44	54	SI
157	2228+00	South	22489 Barrett Town Road (Rt 641)	850	40	54	SI
159	2295+00	South	8135 W. Blackwater Drive (Rt 603)	500	49	59	SI
160	2295+00	South	8135 W. Blackwater Drive (Rt 603)	650	44	57	SI
161	2294+00	North	23231 Antioch Road (Rt 657)	1000	44	50	
162	2293+00	North	23241 Antioch Road (Rt 657)	1000	44	50	
163	2304+00	North	8299 W. Blackwater Road (Rt 603)	300	51	62	SI
164	2305+50	North	8315 W. Blackwater Road (Rt 603)	400	51	61	SI
165	2306+50	North	8331 W. Blackwater Road (Rt 603)	600	51	58	
166	2308+00	North	8347 W. Blackwater Road (Rt 603)	700	51	57	
167	2309+00	North	8359 W. Blackwater Road (Rt 603)	800	51	56	
168	2310+00	North	8367 W. Blackwater Road (Rt 603)	900	51	55	
169	2311+00	North	8376 W. Blackwater Road (Rt 603)	750	51	56	
170	2311+00	North	8376 W. Blackwater Road (Rt 603)	1000	51	55	
171	2312+00	North	8376 W. Blackwater Road (Rt 603)	800	51	56	
173	2313+00	North	8376 W. Blackwater Road (Rt 603)	950	51	55	
174	2314+00	North	8376 W. Blackwater Road (Rt 603)	1000	51	55	
177	2376+00	North	9423 W. Blackwater Road (Rt 603)	950	51	56	
178	2378+00	North	9450 W. Blackwater Road (Rt 603)	750	45	55	SI
179	2379+00	North	9478 W. Blackwater Road (Rt 603)	350	40	61	SI
180	2382+50	North	9512 W. Blackwater Road (Rt 603)	400	41	60	SI
181	2384+50	North	9535 W. Blackwater Road (Rt 603)	900	51	55	

**TABLE C.1
EXISTING AND FUTURE NOISE LEVELS - CBA 1**

Site ID	Station	Loc	Address/Road Name	Distance (feet)	Existing dBA	Build dBA	Noise Impact Type (NAC,SI, Both)
182	2385+50	North	9549 W. Blackwater Road (Rt 603)	875	51	55	
183	2386+50	North	9561 W. Blackwater Road (Rt 603)	850	51	56	
184	2392+50	North	10078 W. Blackwater Road (Rt 603)	600	51	58	
185	2403+50	North	24281 Walters Highway (Rt 258)	350	58	63	
188	2398+00	South	24416 Highway (Rt 258)	600	60	63	
189	2398+00	South	24426 Walters Highway (Rt 258)	750	60	63	
190	2396+00	South	9593 Bear Trap Circle	700	52	57	
194	2403+50	North	10180 E. Blackwater Road (Rt 603)	700	60	61	
195	2405+00	North	10190 E. Blackwater Road (Rt 603)	750	57	59	
196	2406+00	North	10184 E. Blackwater Road (Rt 603)	700	52	58	
197	2407+00	North	10186 E. Blackwater Road (Rt 693)	750	52	58	
198	2408+00	North	100 Maple Lane	800	52	58	
199	2408+50	North	107 Maple Lane	750	48	57	
200	2409+00	North	106 Maple Lane	650	45	57	SI
201	2411+00	North	105 Maple Lane	650	44	57	SI
202	2410+00	North	104 Maple Lane	750	44	56	SI
203	2409+00	North	102 Maple Lane	800	49	56	
204	2409+00	North	45 Bank Street	900	55	56	
205	2410+00	North	41 Bank Street	925	55	56	
206	2411+00	North	39 Bank Street	950	55	56	
207	2453+50	North	11126 E. Griffin Street (Rt 636)	850	45	55	SI
208	2455+00	North	11138 E. Griffin Street (Rt 636)	850	45	55	SI
209	2457+00	North	11154 E. Griffin Street (Rt 636)	800	45	55	SI
210	2458+50	North	11164 E. Griffin Street (Rt 636)	700	43	57	SI
211	2462+00	North	25020 Tyler Drive (Rt 608)	600	40	58	SI
212	2463+00	North	25034 Tyler Drive (Rt 608)	500	40	60	SI
213	2465+50	North	25058 Tyler Drive (Rt 608)	450	40	61	SI
214	2467+00	North	25070 Tyler Drive (Rt 608)	450	40	61	SI
215	2469+00	North	25092 Tyler Drive (Rt 608)	600	40	58	SI
216	2470+50	North	25110 Tyler Drive (Rt 608)	600	40	58	SI
217	2472+00	North	25126 Tyler Drive (Rt 608)	600	40	58	SI
218	2474+00	North	25140 Tyler Drive (Rt 608)	500	40	60	SI
219	2572+00	North	Old Mill Road (Rt 607)	450	43	59	SI
220	2572+50	North	4512 Old Mill Road (Rt 607)	250	46	64	SI
224	2579+00	South	4437 Old Mill Road (Rt 607)	600	45	57	SI
225 - M14	2581+50	South	4412 Old Mill Road (Rt 607)	550	45	56	SI
226	2580+00	South	4409 Old Mill Road (Rt 607)	700	45	55	SI
227	2580+50	South	4397 Old Mill Road (Rt 607)	850	45	54	
228	2581+00	South	4385 Old Mill Road (Rt 607)	1000	45	52	
229	2658+00	North	5645 Old Myrtle Road (Rt 632)	950	47	52	
230	2654+00	North	5676 Old Myrtle Road (Rt 632)	800	47	54	
231	2646+00	North	5753 Old Myrtle Road (Rt 632)	950	48	52	
232	2640+00	North	5824 Old Myrtle Road (Rt 632)	600	48	57	
234	2626+50	South	6125 Old Myrtle Road (Rt 632)	625	46	56	SI
235	2623+00	South	6128 Old Myrtle Road (Rt 632)	400	48	59	SI
236	2622+50	South	6137 Old Myrtle Road (Rt 632)	650	48	56	
237	2621+00	South	6148 Old Myrtle Road (Rt 632)	500	48	58	SI
238	2619+50	South	Old Myrtle Road (Rt 632)	400	42	59	SI
239	2619+00	South	6220 Old Myrtle Road (Rt 632)	850	48	54	
240	2617+00	South	6221 Old Myrtle Road (Rt 632)	450	41	59	SI
241	2617+00	South	6232 Old Myrtle Road (Rt 632)	700	48	55	
242	2615+50	South	6248 Old Myrtle Road (Rt 632)	750	48	55	
243	2612+00	South	6125 Old Myrtle Road (Rt 632)	1000	48	52	

**TABLE C.1
EXISTING AND FUTURE NOISE LEVELS - CBA 1**

Site ID	Station	Loc	Address/Road Name	Distance (feet)	Existing dBA	Build dBA	Noise Impact Type (NAC,SI, Both)
244	2606+00	South	6356 Old Myrtle Road (Rt 632)	700	40	54	SI
245	2633+50	South	3421 Archers Mill Road (Rt 636)	950	40	51	SI
246	2676+00	North	5469 Old Myrtle Road (Rt 632)	400	40	59	SI
246A	2779+00	North	Pruden Boulevard (Rt 460)	500	44	58	SI
246B	2772+00	North	Pruden Boulevard (Rt 460)	550	44	57	SI
246C	2814+50	North	Kings Fork Road (Rt 634)	200	43	66	Both
249	2776+50	South	1821 Kings Fork Road (Rt 634)	1000	55	62	
250	2777+00	South	1817 Kings Fork Road (Rt 634)	900	55	62	
251	2778+50	South	1801 Kings Fork Road (Rt 634)	750	55	63	
252	2774+50	South	1778 Kings Fork Road (Rt 634)	175	40	67	Both
252A	2778+00	South	Kings Fork Road (Rt 634)	300	45	61	SI
253	2781+00	South	1777 Kings Fork Road (Rt 634)	500	55	63	
254	2783+00	South	1760 Kings Fork Road (Rt 634)	200	51	67	Both
255	2785+00	South	1761 Kings Fork Road (Rt 634)	750	40	54	SI
257	2788+50	South	1755 Kings Fork Road (Rt 634)	800	40	52	SI
258	2788+00	South	1749 Kings Fork Road (Rt 634)	100	51	70	Both
260	2788+00	South	1759 Kings Fork Road (Rt 634)	450	44	59	SI
262	2795+00	North	2969 Pitchkettle Road (Rt 604)	300	52	62	SI
263	2794+50	North	2973 Pitchkettle Road (Rt 604)	400	52	61	
264	2793+50	North	2980 Pitchkettle Road (Rt 604)	700	52	57	
265	2850+00	South	General Early Drive (Rt 635)	900	43	51	
			Noise Abatement Criteria (NAC) Impact				0
			Substantial Increase Impact				126
			Both types of Impact				32
			TOTAL IMPACTS CBA 1				158

TABLE C.2
Existing and Future Noise Levels - CBA 2

Site ID	Station	Loc	Address/Road Name	Distance (feet)	Existing dBA	Build dBA	Noise Impact Type (NAC,SI, Both)
1	110+00	South	4415 County Drive (Rt 460) Sacred Heart Church	125	60 Ext 40 Int	67 Ext 47 Int	NAC Ext Only
2	138+00	South	4815 W. Quaker Road (Rt 629)	400	58	59	
3	166+00	North	County Drive (Rt 460)	200	63	65	
4	179+00	North	County Drive (Rt 460)	200	63	65	
5	197+00	North	County Drive (Rt 460)	200	63	65	
6	417+00	South	County Drive (Rt 460)	225	63	65	
7	418+50	South	County Drive (Rt 460)	200	63	65	
8	420+00	South	County Drive (Rt 460)	200	63	65	
9	421+00	South	County Drive (Rt 460)	200	63	65	
10	423+50	South	County Drive (Rt 460)	150	65	67	NAC
11	426+50	North	County Drive (Rt 460)	150	65	67	NAC
12	430+00	South	County Drive (Rt 460)	150	65	67	NAC
13	442+00	South	County Drive (Rt 460)	250	61	63	
14	445+50	South	County Drive (Rt 460)	250	61	63	
M15	463+00	North	12900 West Quaker Road Harrison Elementary School	750	51 Ext 40 Int	53 Ext 40 Int	
16	488+50	South	13407 Hines Road (Rt 625)	400	53	60	
17	490+00	North	13211 Hines Road (Rt 625)	500	51	59	
18	496+00	North	10519 Webb Road (Rt 613)	250	51	63	
19	497+00	North	10603 Webb Road (Rt 613)	275	51	62	
20	498+00	North	10605 Webb Road (Rt 613)	300	51	61	
21	497+00	North	10604 Webb Road (Rt 613)	400	51	59	
22	500+50	North	10607 Webb Road (Rt 603)	150	50	65	SI
23	528+00	South	County Drive (Rt 460)	600	65	64	
24	529+00	South	County Drive (Rt 460)	500	65	64	
25	530+50	South	County Drive (Rt 460)	400	65	64	
26	532+00	South	County Drive (Rt 460)	300	65	64	
27	533+00	South	County Drive (Rt 460)	250	65	64	
28	566+50	North	County Drive (Rt 460)	250	61	62	
29	569+50	North	County Drive (Rt 460)	250	61	62	
30	576+50	North	County Drive (Rt 460)	150	65	66	NAC
31	578+50	North	County Drive (Rt 460)	300	60	60	
32	581+50	North	County Drive (Rt 460)	250	61	62	
33	669+50	South	General Mahone Highway (Rt 460)	300	61	61	
34	671+00	South	General Mahone Highway (Rt 460)	400	59	59	
35	669+50	North	General Mahone Highway (Rt 460)	200	63	64	
36	747+50	North	General Mahone Highway (Rt 460)	150	65	66	NAC
37	954+50	North	4474 Spring Branch Road (Rt 653)	150	48	67	Both
38	954+50	North	4456 Spring Branch Road (Rt 653)	250	48	63	
39	954+00	North	4424 Spring Branch Road (Rt 653) Spring Branch Zion Hill Holiness Church	750	48 Ext 40 Int	54 Ext 40 Int	
40	958+00	South	4474 Spring Branch Road (Rt 653)	150	48	67	Both
41	957+00	South	4474 Spring Branch Road (Rt 653)	800	47	53	
43	961+00	South	4474 Spring Branch Road (Rt 653)	1000	47	51	
44	993+00	North	4309 Petersburg Road (Rt 613)	350	45	60	SI
45	1006+50	South	551 Jasper Road	200	45	64	SI
46	1008+00	South	547 Jasper Road	300	45	61	SI
47 - M17	1009+00	South	543 Jasper Road	400	40	59	SI
48	1012+50	South	523 Jasper Road	650	45	55	SI
49	1014+00	South	517 Jasper Road	700	45	54	
50	1030+00	North	5476 Dam Road (Rt 606)	150	46	67	SI

TABLE C.2
Existing and Future Noise Levels - CBA 2

Site ID	Station	Loc	Address/Road Name	Distance (feet)	Existing dBA	Build dBA	Noise Impact Type (NAC, SI, Both)
51	1085+00	South	6144 George Town Road (Rt 615)	700	47	54	
52	1135+00	South	General Mahone Highway (Rt 460)	250	56	63	
53	1295+00	North	35105 Owens Grove Road (Rt 604)	250	48	63	SI
54	1297+00	North	35125 Owens Grove Road (Rt 604)	400	48	59	SI
55	1300+00	North	35161 Owens Grove Road (Rt 604)	600	47	56	
56	1313+00	North	35280 Owens Grove Road (Rt 604)	850	45	53	
57	1325+00	South	35464 Old Wakefield Road (Rt 615)	350	40	60	SI
58	1336+50	North	Old Wakefield Road (Rt 615)	350	42	60	SI
59	1340+00	North	35576 Old Wakefield Road (Rt 615)	300	42	61	SI
60	1356+00	South	Old Wakefield Road (Rt 615)	200	42	65	SI
61	1394+50	North	Springhill Road (Rt 603)	400	42	59	SI
62	1397+00	North	Springhill Road (Rt 603)	350	42	60	SI
63 - M6	1408+00	South	9246 Springhill Road (Rt 603)	750	40	54	SI
64	1427+00	South	9309 Springhill Road (Rt 603)	450	40	58	SI
65	1469+00	South	10006 Birch Island Road (Rt 31)	200	61	67	NAC
66	1469+50	South	10020 Birch Island Road (Rt 31)	350	61	64	
67	1470+00	South	10028 Birch Island Road (Rt 31)	450	61	63	
68	1486+00	North	38301 Rocky Hock Road (Rt 617)	200	40	65	SI
69	1493+00	North	38307 Rocky Hock Road (Rt 617)	250	40	63	SI
70	1507+00	South	38215 Rocky Hock Road (Rt 617)	1000	48	53	
71	1503+00	North	38411 Rocky Hock Road (Rt 617)	300	52	63	
72	1503+00	North	38469 Rocky Hock Road (Rt 617)	900	52	55	
73	1505+00	North	38476 Rocky Hock Road (Rt 617)	1000	52	55	
74 - M18	1616+50	North	571 Freeman Pond Road (Rt 639)	200	40	65	SI
75	1621+50	North	34488 Freeman Pond Road (Rt 639)	350	40	60	SI
76	1782+50	South	7155 Holloman Drive	450	40	59	SI
77	1785+00	South	7302 Holloman Drive	750	40	54	SI
78	1837+00	North	6464 Proctors Bridge Road (Rt 616)	800	52	56	
79	1846+00	South	7204 Proctors Bridge Road (Rt 616)	1000	53	55	
80	1852+50	North	7201 Proctors Bridge Road (Rt 616)	150	40	67	Both
81 - M19	1905+00	South	36361 Broadwater Road (Rt 620)	500	53	59	
82	1908+00	South	36060 Broadwater Road (Rt 620)	600	53	59	
83	1908+50	South	36366 Broadwater Road (Rt 620)	550	52	59	
84	1908+50	South	36382 Broadwater Road (Rt 620)	450	53	60	
85	1911+00	North	37033 Broadwater Road (Rt 620)	600	53	59	
86	1911+50	North	37045 Broadwater Road (Rt 620)	750	53	57	
87	1912+00	North	37061 Broadwater Road (Rt 620)	900	53	56	
88	1951+50	South	General Mahone Highway (Rt 460)	150	64	68	NAC
89	1972+00	North	General Mahone Highway (Rt 460)	300	58	61	
90	1984+00	North	General Mahone Highway (Rt 460)	150	64	66	NAC
91	1990+00	North	General Mahone Highway (Rt 460)	150	64	66	NAC
92	1991+50	North	General Mahone Highway (Rt 460)	150	64	66	NAC
93	1998+00	North	General Mahone Highway (Rt 460)	125	65	67	NAC
94	2013+00	North	General Mahone Highway (Rt 460)	200	62	65	
95	2028+00	North	General Mahone Highway (Rt 460)	225	61	63	
96	2036+00	North	General Mahone Highway (Rt 460)	450	56	59	
97	2155+50	North	6122 Fire Tower Road (Rt 644)	150	50	67	
98	2154+00	North	6156 Fire Tower Road (Rt 644)	450	51	59	
99	2153+50	North	6184 Fire Tower Road (Rt 644)	650	51	56	
100	2162+00	North	20246 Clark Circle	550	48	57	SI
101	2172+00	North	20380 Clark Circle	350	54	60	
102	2176+00	North	Clark Circle	350	55	60	
103	2176+50	North	20349 Clark Circle	700	50	55	

TABLE C.2
Existing and Future Noise Levels - CBA 2

Site ID	Station	Loc	Address/Road Name	Distance (feet)	Existing dBA	Build dBA	Noise Impact Type (NAC, SI, Both)
105	2262+00	South	Ecella Road	300	59	62	
106	2264+00	South	Ecella Road	300	60	63	
107	2265+00	South	Ecella Road	250	61	64	
108	2290+00	North	Winston Drive (Rt 639)	350	57	60	
109	2307+00	North	Windsor Boulevard (Rt 460)	150	64	67	
110	2326+00	South	Mill Creek Drive (Rt 638)	250	61	64	
111	2330+00	South	Antioch Road (Rt 657)	250	61	64	
112	2332+50	South	Antioch Road (Rt 657)	250	61	64	
113	2336+00	North	Cut Thru Road (Rt 606)	200	62	65	
114	2337+00	North	Cut Thru Road (Rt 606)	450	56	59	
115	2390+00	North	23183 Stave Mill Road (Rt 646)	450	52	60	
116	2392+00	North	23195 Stave Mill Road (Rt 646)	250	53	64	
117	2392+00	North	23201 Stave Mill Road (Rt 646)	200	56	66	NAC
118	2392+00	North	23227 Stave Mill Road (Rt 646)	150	56	68	NAC
119	2394+00	South	Windsor Boulevard (Rt 460)	200	67	66	NAC
120 - M22	2441+50	South	23320 North Court Street Windsor Middle School	300	51 Ext 40 Int	62 Ext 42 Int	SI Ext Only
121	2448+00	South	2335 North Court Street	450	44	59	SI
122 (4 up, 4 dn)	2437+00	North	106 A-H Kensington Court Windsor Court Apartments	400	49	60	4 SI
123 (4 up, 4 dn)	2438+50	North	104 A-H Kensington Court Windsor Court Apartments	400	52	61	
124 (4 up, 4 dn)	2440+00	North	102 A-H Kensington Court Windsor Court Apartments	375	57	62	
125 (4 up, 4 dn)	2439+50	North	103 A-H Georgie D'Tyler Drive Windsor Court Apartments	475	56	61	
126 (4 up, 4 dn)	2438+50	North	105 A-H Georgie D'Tyler Drive Windsor Court Apartments	500	52	60	
127 (4 up, 4 den)	2438+00	North	106 A-H Georgie D'Tyler Drive Windsor Court Apartments	650	52	58	
128 (4 up, 4 dn)	2439+00	North	104 A-H Georgie D'Tyler Drive Windsor Court Apartments	650	56	59	
129 (4 up, 4 dn)	2440+50	North	102 A-H Georgie D'Tyler Drive Windsor Court Apartments	650	63	64	
130	2440+50	North	23128 Courthouse Highway (Rt 258)	800	63	64	
131	2440+50	North	23116 Courthouse Highway (Rt 258)	1000	63	63	
132 - M23	2446+00 to 2463+00	North	10401 Courthouse Highway (Rt 258) Twin Ponds Trailer Park	250- 1000	50	60 @500'	22 SI
133	2496+00	North	23212 Deer Path Trail (Rt 600)	750	49	55	
134	2497+00	North	23278 Deer Path Trail (Rt 600)	500	49	59	SI
135	2497+50	North	23326 Deer Path Trail (Rt 600)	300	49	62	SI
136	2502+50	South	23411 Deer Path Trail (Rt 600)	850	49	53	
137	2553+00	South	12340 Shiloh Drive (Rt 603)	650	56	59	
138	2550+00	South	12341 Shiloh Drive (Rt 603)	500	54	61	
139	2554+00	South	12372 Shiloh Drive (Rt 603)	450	58	60	
140	2555+50	South	12386 Shiloh Drive (Rt 603)	350	58	62	
143	2560+50	South	24126 Briggs Way	300	42	61	SI
144	2558+00	South	24120 Briggs Way	250	48	61	SI
147	2556+00	North	12539 Shiloh Drive (Rt 603)	450	49	59	SI
148	2558+00	North	12535 Shiloh Drive (Rt 603)	750	50	56	
149	2559+50	North	13005 Shiloh Drive (Rt 603)	850	51	55	
150	2628+00	North	13434 Old Suffolk Road (Rt 636)	750	57	59	
151	2626+00	North	13414 Old Suffolk Road (Rt 636)	600	56	60	

TABLE C.2
Existing and Future Noise Levels - CBA 2

Site ID	Station	Loc	Address/Road Name	Distance (feet)	Existing dBA	Build dBA	Noise Impact Type (NAC,SI, Both)
152	2619+50	North	13343 Old Suffolk Road (Rt 636)	250	53	64	SI
154	2613+00	North	13293 Old Suffolk Road (Rt 636)	350	46	61	SI
155	2613+00	South	13241 Old Suffolk Road (Rt 636)	250	53	64	SI
156	2615+50	South	13208 Old Suffolk Road (Rt 636)	600	61	63	
157	2613+00	South	13188 Old Suffolk Road (Rt 636)	800	61	62	
158	2604+00	South	13089 Old Suffolk Road (Rt 636)	1000	55	57	
159	2621+00	South	13244 Windsor Boulevard (Rt 460)	650	67	67	NAC
160	2623+00	South	13270 Windsor Boulevard (Rt 460)	400	67	67	NAC
161	2640+00	North	Pruden Boulevard (Rt 460)	750	65	64	
162	2644+00	North	Pruden Boulevard (Rt 460)	600	56	61	
163	2648+00	North	Pruden Boulevard (Rt 460)	1000	57	60	
164	2699+00	North	5400 Old Myrtle Road (Rt 632)	1000	49	51	
165	2698+00	North	5408 Old Myrtle Road (Rt 632)	800	49	53	
166	2697+00	North	5412 Old Myrtle Road (Rt 632)	650	49	56	
167	2696+50	North	5416 Old Myrtle Road (Rt 632)	500	49	58	
168	2686+00	North	5460 Old Myrtle Road (Rt 632)	225	45	64	SI
169	2693+00	North	5464 Old Myrtle Road (Rt 632)	225	46	64	SI
170 - M13	2695+00	North	5466 Old Myrtle Road (Rt 632)	200	48	65	SI
171	2779+00	North	Pruden Boulevard (Rt 460)	500	46	58	SI
172	2772+00	North	Pruden Boulevard (Rt 460)	550	46	57	SI
173	2814+50	North	Kings Fork Road (Rt 634)	200	46	65	SI
176	2815+00	South	1821 Kings Fork Road (Rt 634)	1000	51	54	
177	2815+50	South	1817 Kings Fork Road (Rt 634)	900	51	55	
178	2816+50	South	1801 Kings Fork Road (Rt 634)	750	51	55	
179	2812+00	South	1778 Kings Fork Road (Rt 634)	175	47	65	SI
180	2816+00	South	Kings Fork Road (Rt 634)	300	48	61	SI
181	2818+50	South	1777 Kings Fork Road (Rt 634)	500	51	59	
182	2820+50	South	1760 Kings Fork Road (Rt 634)	200	51	65	SI
183	2823+00	South	1761 Kings Fork Road (Rt 634)	750	47	55	
185	2826+00	South	1755 Kings Fork Road (Rt 634)	800	47	54	
186	2826+00	South	1749 Kings Fork Road (Rt 634)	100	51	67	Both
188	2826+50	South	1759 Kings Fork Road (Rt 634)	450	48	59	SI
190	2833+00	North	2969 Pitchkettle Road (Rt 604)	300	50	61	SI
191	2832+00	North	2973 Pitchkettle Road (Rt 604)	400	50	60	SI
192	2831+00	North	2980 Pitchkettle Road (Rt 604)	700	50	56	
193	2888+00	South	General Early Drive (Rt 635)	900	45	52	
			Noise Abatement Criteria (NAC) Impact				17
			Substantial Increase Impact				72
			Both types of Impact				4
			TOTAL IMPACTS CBA 2				93

TABLE C.3
Existing and Future Noise Levels - CBA 3

Site ID	Station	Loc	Address/Road Name	Distance (feet)	Existing dBA	Build dBA	Noise Impact Type (NAC,SI, Both)
A	109+00	South	4415 County Drive (Rt 460) Sacred Heart Church	125	60 Ext 40 Int	69 Ext 49 Int	NAC Ext Only
3 - M1	148+00	South	5280 W. Quaker Road (Rt 629)	700	51	58	
4	150+00	South	5288 W. Quaker Road (Rt 629)	750	51	58	
5	151+00	South	5296 W. Quaker Road (Rt 629)	800	51	57	
6	152+00	South	5304 W. Quaker Road (Rt 629)	850	51	57	
7	141+00	South	5100 W. Quaker Road (Rt 629)	300	45	63	SI
8	133+50	South	5000 W. Quaker Road (Rt 629)	850	51	57	
10 - M2	246+50	South	8800 Bowbridge Road	350	40	61	SI
13	230+00	South	6516 W. Quaker Road (Rt 629)	1050	40	51	SI
14	223+00	South	6524 W. Quaker Road (Rt 629)	550	40	58	SI
15	161+50	North	5412 W. Quaker Road (Rt 629)	700	40	55	SI
16	254+00	South	7196 W. Quaker Road (Rt 629)	200	40	66	Both
18	260+00	North	7200 W. Quaker Road (Rt 629)	800	40	54	SI
19	267+50	South	7208 W. Quaker Road (Rt 629)	225	40	66	Both
20	274+00	South	7400 W. Quaker Road (Rt 629)	300	40	62	SI
21	276+50	North	9000 Prince George Drive (Rt 156)	350	40	61	SI
22	312+00	South	9523 E. Quaker Road (Rt 629)	650	49	58	
23	310+00	South	9517 E. Quaker Road (Rt 629)	650	49	58	
24	308+50	South	9511 E. Quaker Road (Rt 629)	650	49	58	
26	328+00	North	9637 E. Quaker Road (Rt 629)	650	40	56	SI
27	331+00	South	9641 E. Quaker Road (Rt 629)	450	40	60	SI
31	351+00	North	8724 E. Quaker Road (Rt 629)	600	40	56	SI
32	359+00	South	8900 E. Quaker Road (Rt 629)	550	43	57	SI
34	363+50	South	9000 E. Quaker Road (Rt 629)	300	43	62	SI
35	368+50	North	9880 Kanak Drive	300	40	62	SI
38	373+00	North	Kanak Drive	500	40	58	SI
39	367+50	North	9876 Kanak Drive	550	40	57	SI
40	369+50	North	9801 Kanak Drive	750	40	55	SI
42	397+00	North	9620 Centennial Road (Rt 635)	600	43	56	SI
43	429+00	North	10006 Easy Street (Rt 695)	750	43	55	SI
44	431+00	North	10018 Easy Street (Rt 695)	550	43	57	SI
45B	451+00	North	Easy Street (Rt 695)	300	40	62	SI
46	475+50	South	10609 Hitchcock (Rt 618)	150	40	67	Both
M21	869+50	North	3195 Laurel Drive (Rt 601)	400	40	60	SI
47	1094+50	North	5476 Dam Road (Rt 606)	150	40	68	Both
48	1078+00	South	523 Jasper Road	650	40	56	SI
49 - M17	1075+00	South	543 Jasper Road	400	40	60	SI
50	1073+00	South	547 Jasper Road	300	40	64	SI
51	1072+00	South	551 Jasper Road	200	40	66	Both
52	1080+00	South	517 Jasper Road	700	40	55	SI
53	1022+00	South	31019 Petersburg Road (Rt 613)	250	41	65	SI
54	1012+50	North	31089 Petersburg Road (Rt 613)	200	40	66	Both
55	1041+00	North	31170 Petersburg Road (Rt 613)	200	40	66	Both
56	1045+50	North	4263 Petersburg Road (Rt 613)	600	40	57	SI
57	1055+50	North	4309 Petersburg Road (Rt 613)	350	40	61	SI
58	985+50	North	4563 Petersburg Road (Rt 613)	600	40	56	SI
59	1124+50	South	6144 George Town Road (Rt 615)	750	44	55	SI
60	1145+00	South	6341 George Town Road (Rt 615)	700	40	55	SI
61	1144+50	South	6345 George Town Road (Rt 615)	800	45	55	SI
62	1147+00	South	6371 George Town Road (Rt 615)	850	45	55	SI
63	1237+00	South	Walnut Hill Road (Rt 614)	800	40	55	SI

TABLE C.3
Existing and Future Noise Levels - CBA 3

Site ID	Station	Loc	Address/Road Name	Distance (feet)	Existing dBA	Build dBA	Noise Impact Type (NAC,SI, Both)
64	1225+00	South	33507 Walnut Hill Road (Rt 614)	400	40	60	SI
65	1246+50	North	Walnut Hill Road (Rt 614)	700	40	55	SI
66	1318+00	South	35120 Old Wakefield Road (Rt 615)	50	44	70	Both
67A	1313+50	North	Old Wakefield Road (Rt 615)	300	40	63	SI
70A	1340+50	South	Owens Grove Road (Rt 604)	600	47	57	SI
70B	1357+00	South	Old Wakefield Road (Rt 615)	650	40	56	SI
70C	1364+00	North	Old Wakefield Road (Rt 615)	350	40	62	SI
71A	1368+00	North	Old Wakefield Road (Rt 615)	250	40	65	SI
71C	1384+50	South	Old Wakefield Road (Rt 615)	200	40	66	Both
72	1456+00	South	9309 Springhill Road (Rt 603)	450	40	60	SI
73 - M6	1436+00	South	9246 Springhill Road (Rt 603)	750	40	55	SI
77	1426+00	North	9038 Springhill Road (Rt 603)	350	45	62	SI
78	1496+50	South	10006 Birch Island Road (Rt 31)	250	56	66	Both
79	1497+00	South	10020 Birch Island Road (Rt 31)	400	56	61	
80	1498+00	South	10028 Birch Island Road (Rt 31)	500	56	61	
80A	1514+50	South	White Marsh Road (Rt 617)	200	40	66	Both
80B	1522+00	South	White Marsh Road (Rt 617)	450	40	60	SI
81	1531+00	South	38411 White Marsh Road (Rt 617)	900	44	55	SI
82	1534+00	South	38469 White Marsh Road (Rt 617)	550	44	58	SI
83	1536+00	South	38476 White Marsh Road (Rt 617)	700	45	56	SI
90	1568+00	North	281 White Marsh Road (Rt 617)	350	42	63	SI
91	1573+00	South	722 White Marsh Road (Rt 617)	250	40	65	SI
92	1576+50	North	30 Southampton Road (Rt 624)	600	42	57	SI
93	1675+50	North	2188 Southampton Road (Rt 624)	750	43	55	SI
94	1827+50	North	6195 Proctors Bridge Road (Rt 616)	1000	42	53	SI
95	1828+00	North	6211 Proctors Bridge Road (Rt 616)	900	42	54	SI
96	1829+00	North	6225 Proctors Bridge Road (Rt 616)	750	42	55	SI
97	1830+00	North	6249 Proctors Bridge Road (Rt 616)	550	42	58	SI
98 - M8	1839+00	South	6413 Proctors Bridge Road (Rt 616)	450	42	60	SI
99	1839+25	South	6421 Proctors Bridge Road (Rt 616)	500	42	59	SI
100	1976+00	North	38402 Broadwater Road (Rt 620)	700	47	57	SI
102	1959+00	North	38123 Broadwater Road (Rt 620)	350	40	62	SI
103	1991+00	South	8392 Scrotchlow Drive	650	40	56	SI
104	2118+00	North	18777 Tomlin Hill Drive (Rt 649)	300	40	64	SI
106	2116+00	South	19091 Tomlin Hill Drive (Rt 649)	700	40	56	SI
107	2116+50	South	19111 Tomlin Hill Drive (Rt 649)	850	40	54	SI
108	2122+50	South	Dodge Lane	700	40	56	SI
109	2121+00	South	6533 Dodge Lane	350	40	63	SI
110	2122+00	South	6657 Dodge Lane	350	40	63	SI
111	2126+50	South	Dodge Lane	500	40	59	SI
112	2126+50	South	7034 Dodge Lane	300	40	64	SI
113	2127+50	South	7040 Dodge Lane	200	40	66	SI
115	2162+00	North	19079 Garrison Drive (Rt 646)	1050	40	53	SI
116	2166+50	North	19123 Garrison Drive (Rt 646)	800	40	55	SI
117	2162+00	North	19132 Garrison Drive (Rt 646)	450	40	60	SI
120	2171+50	North	19225 Garrison Drive (Rt 646)	200	41	66	SI
121	2174+50	South	19230 Garrison Drive (Rt 646)	500	40	59	SI
122	2216+00	North	8518 Firetower Road (Rt 644)	250	40	65	SI
123	2285+50	South	9328 Tar Road (Rt 645)	125	40	69	Both
124 - M10	2331+00 to 2343+00	North	Qual Hollow Lane, Clydesdale Mobile Trailer Park	450- 1000	48	60	18 SI
126	2376+50	North	10283 Cut Thru Road (Rt 606)	700	58	63	
127	2380+00	North	Ball Fields	1000	53	58	

TABLE C.3
Existing and Future Noise Levels - CBA 3

Site ID	Station	Loc	Address/Road Name	Distance (feet)	Existing dBA	Build dBA	Noise Impact Type (NAC,SI, Both)
129	2389+00	South	22392 Courthouse Highway (Rt 258)	650	52	58	
130	2389+50	South	22404 Courthouse Highway (Rt 258)	750	52	57	
131	2390+00	South	22416 Courthouse Highway (Rt 258)	900	52	56	
132	2393+50	South	22444 Courthouse Highway (Rt 258)	1000	52	56	
133	2392+00	South	Courthouse Highway (Rt 258)	1000	52	56	
136	2409+50	South	22477 York Court	1050	43	53	SI
137	2409+50	South	22463 York Court	950	43	53	SI
138	2409+50	South	22453 York Court	850	43	54	SI
139	2410+00	South	22445 York Court	750	43	55	SI
140	2408+50	South	22442 York Court	600	43	57	SI
141	2406+00	South	22446 York Court	650	43	56	SI
142	2405+00	South	22454 York Court	750	43	55	SI
143	2405+00	South	22464 York Court	900	43	54	SI
146	2411+00	South	11005 Windsor Way	900	43	54	SI
147	2413+00	South	11033 Windsor Way	700	43	56	SI
148	2415+00	South	11045 Windsor Way	600	43	57	SI
149	2417+50	South	11061 Windsor Way	400	43	61	SI
150	2419+50	South	11075 Windsor Way	400	43	61	SI
151	2421+50	South	11083 Windsor Way	400	43	61	SI
152	2422+50	South	11091 Windsor Way	450	43	60	SI
153	2424+00	South	11097 Windsor Way	475	43	60	SI
154	2425+00	South	11105 Windsor Way	500	43	59	SI
155	2427+00	South	11119 Windsor Way	525	43	59	SI
156	2428+50	South	11127 Windsor Way	550	43	58	SI
157	2430+00	South	11135 Windsor Way	550	43	58	SI
158	2431+00	South	11145 Windsor Way	550	43	58	SI
159	2432+00	South	11155 Windsor Way	600	43	57	SI
160	2435+50	South	11165 Windsor Way	450	43	60	SI
161	2436+50	South	11171 Windsor Way	650	43	56	SI
162	2435+50	South	11175 Windsor Way	850	43	54	SI
163	2434+00	South	11170 Windsor Way	950	43	53	SI
164	2432+00	South	11162 Windsor Way	900	43	54	SI
165	2431+00	South	11150 Windsor Way	850	43	54	SI
166	2429+50	South	11086 Wythe Drive	850	43	54	SI
167	2429+00	South	11085 Wythe Drive	850	43	54	SI
168	2426+00	South	11112 Windsor Way	800	43	55	SI
169	2424+00	South	11106 Windsor Way	750	43	55	SI
170	2423+50	South	11094 Windsor Way	700	43	56	SI
171	2420+00	South	11086 Windsor Way	650	43	56	SI
172	2418+00	South	11066 Windsor Way	700	43	56	SI
173	2416+00	South	11042 Windsor Way	850	43	54	SI
174	2421+00	North	11280 Five Forks Road (Rt 606)	550	41	58	SI
175	2422+00	North	11294 Five Forks Road (Rt 606)	650	41	56	SI
176	2423+50	North	11322 Five Forks Road (Rt 606)	800	41	55	SI
177	2425+50	North	11332 Five Forks Road (Rt 606)	350	40	62	SI
179	2425+00	North	11346 Five Forks Road (Rt 606)	900	41	54	SI
180	2426+00	North	11358 Five Forks Road (Rt 606)	1000	41	53	SI
181	2463+00	North	23272 Deer Path Trail (Rt 600)	400	41	61	SI
182	2466+00	North	23290 Deer Path Trail (Rt 600)	250	41	65	SI
187	2475+00	South	23411 Deer Path Trail (Rt 600)	150	41	69	Both
188	2476+00	South	23486 Deer Path Trail (Rt 600) Kingdom Hall of Jehovah's Witnesses	900	41 Ext 40 Int	54 Ext 40 Int	SI Ext Only
189	2525+00	South	12340 Shiloh Drive (Rt 603)	650	45	57	SI
190	2522+50	South	12341 Shiloh Drive (Rt 603)	500	45	60	SI

TABLE C.3
Existing and Future Noise Levels - CBA 3

Site ID	Station	Loc	Address/Road Name	Distance (feet)	Existing dBA	Build dBA	Noise Impact Type (NAC,SI, Both)
191	2526+50	South	12372 Shiloh Drive (Rt 603)	450	45	60	SI
192	2528+00	South	12386 Shiloh Drive (Rt 603)	350	45	62	SI
195	2534+00	South	24126 Briggs Way	300	42	64	SI
196	2530+00	South	24120 Briggs Way	250	40	65	SI
199	2529+00	North	12539 Shiloh Drive (Rt 603)	450	45	60	SI
200	2530+50	North	12535 Shiloh Drive (Rt 603)	750	47	57	SI
201	2532+00	North	13005 Shiloh Drive (Rt 603)	850	47	57	SI
202	2601+00	North	13434 Old Suffolk Road (Rt 636)	750	57	58	
203	2598+50	North	13414 Old Suffolk Road (Rt 636)	600	55	58	
204	2592+00	North	13343 Old Suffolk Road (Rt 636)	250	52	65	SI
206	2585+00	North	13293 Old Suffolk Road (Rt 636)	350	47	63	SI
207	2585+50	South	13241 Old Suffolk Road (Rt 636)	250	53	65	SI
208	2587+50	South	13208 Old Suffolk Road (Rt 636)	600	63	62	
209	2585+00	South	13188 Old Suffolk Road (Rt 636)	800	63	61	
210	2578+00	South	13089 Old Suffolk Road (Rt 636)	1000	54	57	
211	2593+00	South	13244 Windsor Boulevard (Rt 460)	650	67	67	NAC
212	2595+00	South	13270 Windsor Boulevard (Rt 460)	400	67	67	NAC
213	2612+00	North	Pruden Boulevard (Rt 460)	750	65	64	
214	2616+00	North	Pruden Boulevard (Rt 460)	600	54	58	
215	2619+00	North	Pruden Boulevard (Rt 460)	1000	58	59	
216	2671+50	North	5400 Old Myrtle Road (Rt 632)	1000	47	54	
217	2670+00	North	5408 Old Myrtle Road (Rt 632)	800	47	55	
218	2669+00	North	5412 Old Myrtle Road (Rt 632)	650	47	56	
219	2668+00	North	5416 Old Myrtle Road (Rt 632)	500	47	58	SI
220	2660+50	North	5460 Old Myrtle Road (Rt 632)	225	40	65	SI
221A	2666+00	North	5464 Old Myrtle Road (Rt 632)	225	40	65	SI
221 - M13	2666+50	North	5466 Old Myrtle Road (Rt 632)	200	48	66	Both
225	2751+50	North	Pruden Boulevard (Rt 460)	500	44	58	SI
226	2753+50	North	Pruden Boulevard (Rt 460)	550	44	58	SI
227	2787+00	North	Kings Fork Road (Rt 634)	200	43	66	Both
230	2787+00	South	1821 Kings Fork Road (Rt 634)	1000	55	61	
231	2787+50	South	1817 Kings Fork Road (Rt 634)	900	55	61	
232	2788+50	South	1801 Kings Fork Road (Rt 634)	750	55	61	
233	2784+00	South	1778 Kings Fork Road (Rt 634)	175	40	67	Both
234	2787+00	South	Kings Fork Road (Rt 634)	300	45	63	SI
235	2791+00	South	1777 Kings Fork Road (Rt 634)	500	55	62	
236	2792+00	South	1760 Kings Fork Road (Rt 634)	200	51	66	Both
237	2795+00	South	1761 Kings Fork Road (Rt 634)	750	40	54	SI
239	2799+00	South	1755 Kings Fork Road (Rt 634)	800	40	54	SI
240	2797+00	South	1749 Kings Fork Road (Rt 634)	100	51	70	Both
242	2799+00	South	1759 Kings Fork Road (Rt 634)	450	44	59	SI
244	2805+50	North	2969 Pitchkettle Road (Rt 604)	300	52	63	SI
245	2805+00	North	2973 Pitchkettle Road (Rt 604)	400	52	61	
246	2803+00	North	2980 Pitchkettle Road (Rt 604)	700	52	57	
247	2860+00	South	General Early Drive (Rt 635)	900	43	53	SI
			Noise Abatement Criteria (NAC) Impact				3
			Substantial Increase Impact				163
			Both types of Impact				18
			TOTAL IMPACTS CBA 3				184

APPENDIX D

TABLES OF NOISE BARRIERS UNDER CONSIDERATION

TABLE D.1
Noise Barriers Under Consideration - CBA 1

Barrier Name	Begin Station	End Station	Location	Height Range	Length	Sq Feet	No. Sites Protected	No. Sites Benefited
Barrier 1	128+00	145+00	South	12-14	1,700	22,100	5	
Barrier 2	154+00	185+00	South	12-14	3,100	40,800	3	
Barrier 3	159+00	193+00	North	12-14	3,400	44,400	5	1
Barrier 4	178+00	206+00	South	12-14	2,800	26,000	2	
Barrier 5	235+00	318+50	South	12-16	8,350	116,900	10	
Barrier 6	267+00	308+00	North	12-14	4,100	54,000	6	1
Barrier 7	407+50	428+50	South	14-16	2,100	31,000	1	
Barrier 8	474+00	478+00	North	10	400	4,000	1	
Barrier 9	482+00	490+00	North	12-14	800	10,400	1	
Barrier 10	559+00	573+00	South	12-14	1,400	18,400	1	
Barrier 11	588+00	592+00	South	10	400	4,000	1	
Barrier 12	682+00	687+00	South	12	500	6,000	1	
Barrier 13	909+00	921+00	North	12-14	1,200	15,800	2	
Barrier 14	925+50	944+50	North	12-14	1,900	26,000	1	
Barrier 15	1007+00	1019+00	South	12-14	1,200	15,600	2	
Barrier 16	1005+00	1020+00	North	12-14	1,500	20,550	2	
Barrier 17	1064+00	1070+00	North	12-14	600	7,800	1	
Barrier 18	1061+00	1073+00	South	12-14	1,200	16,600	1	
Barrier 19	1125+00	1137+00	South	12-14	1,200	15,600	1	
Barrier 20	1277+00	1291+00	South	12-14	1,400	18,400	2	
Barrier 21	1348+00	1353+00	South	12-14	500	6,200	1	
Barrier 22	1857+00	1865+00	South	12-14	800	10,400	1	
Barrier 23	1422+00	1437+00	South	12-14	1,500	20,400	1	
Barrier 24	1505+00	1515+00	South	12-14	1,000	12,800	1	
Barrier 25	1685+50	1706+50	North	12-14	2,100	29,000	1	
Barrier 26	1724+00	1745+00	North	16-18	2,100	34,800	2	
Barrier 27	1827+50	1852+00	North	12-14	2,450	32,100	2	
Barrier 28	1840+50	1859+50	South	12-14	1,900	26,200	1	
Barrier 29	1968+50	1987+50	South	12-14	1,900	26,200	2	
Barrier 30	1976+00	1995+00	North	12-14	1,900	21,600	4	
Barrier 31	2002+00	2025+00	North	16-20	2,300	40,800	4	
Barrier 32	2011+00	2021+00	South	12-14	1,000	13,600	2	
Barrier 33	2075+00	2102+50	North	12-20	2,750	45,600	2	
Barrier 34	2135+00	2145+00	North	12-14	1,000	13,600	2	
Barrier 35	2118+00	2153+50	South	12-18	3,550	54,100	4	
Barrier 36	2155+00	2204+50	North	14-16	4,950	73,900	17	
Barrier 37	2198+00	2238+00	South	12-16	4,000	57,600	7	
Barrier 38	2209+00	2235+00	North	12-14	2,600	35,400	9	
Barrier 39	2286+00	2304+00	South	12-14	1,800	23,600	2	
Barrier 40	2300+50	2318+50	North	12-14	1,800	23,600	2	
Barrier 41	2367+50	2388+50	North	12-14	2,100	29,000	3	
Barrier 42	2401+00	2421+00	North	14-16	2,000	30,600	3	
Barrier 43	2442+50	2480+00	North	14-18	3,750	59,800	12	
Barrier 44	2567+00	2578+00	North	14-16	1,100	16,400	2	
Barrier 45	2571+00	2589+00	South	14-16	1,800	27,000	3	
Barrier 46	2597+00	2645+50	South	14-20	4,850	79,400	7	4
Barrier 47	2571+00	2581+00	North	14-16	1,000	14,600	1	
Barrier 48	2735+50	2750+00	North	14-16	1,450	21,300	2	
Barrier 49	2774+00	2779+00	North	12	500	6,000	1	
Barrier 50	2772+00	2798+50	South	12-18	2,650	40,800	7	
Barrier 51	2791+00	2799+00	North	12-14	800	10,800	1	
TOTALS					103,150	1,451,550	158	6

TABLE D.2
Noise Barriers Under Consideration – CBA 2

Barrier Name	Begin Station	End Station	Location	Height Range	Length	Sq Feet	No. Sites Protected	No. Sites Benefited
Barrier 1	108+00	111+00	South	14-16	300	4,400	1	
Barrier 2	421+50	425+50	South	14-16	400	6,000	1	
Barrier 3	425+00	429+00	North	14-16	400	6,000	1	
Barrier 4	428+50	431+50	South	14-16	300	4,400	1	
Barrier 5	498+00	502+00	North	14-16	400	6,000	1	
Barrier 6	953+00	956+00	North	14-16	300	4,400	1	
Barrier 7	956+00	960+00	South	14-16	400	5,800	1	
Barrier 8	988+00	997+00	North	14-16	900	13,600	1	
Barrier 9	1003+50	1021+00	South	14-16	1,750	25,500	4	
Barrier 10	1027+50	1031+50	North	14-16	400	5,800	1	
Barrier 11	1291+50	1301+50	North	14-16	1,000	15,100	2	
Barrier 12	1320+50	1329+50	South	14-16	900	13,600	1	
Barrier 13	1332+00	1343+00	North	14-16	1,100	16,500	2	
Barrier 14	1354+00	1358+00	South	14-16	400	5,800	1	
Barrier 15	1390+00	1401+50	North	14-16	1,150	17,400	2	
Barrier 16	1398+00	1418+00	South	14-16	2,000	30,200	1	
Barrier 17	1421+00	1432+00	South	14-16	1,100	16,200	1	
Barrier 18	1465+00	1472+00	South	14-16	700	10,000	1	
Barrier 19	1484+00	1488+00	North	14-16	400	5,800	1	
Barrier 20	1489+50	1496+50	North	14-16	700	10,000	1	
Barrier 21	1614+50	1626+00	North	14-16	1,150	17,300	2	
Barrier 22	1774+00	1796+00	South	14-18	2,200	35,200	2	
Barrier 23	1851+00	1854+00	North	14-16	300	4,400	1	
Barrier 24	1950+50	1952+50	South	10	200	2,000	1	
Barrier 25	2154+00	2168+00	North	14-16	1,400	19,800	1	
Barrier 26	2389+50	2393+50	North	14-16	400	5,800	2	
Barrier 27	2390+00	2397+00	South	14-16	700	10,000	1	
Barrier 28	2441+00	2453+50	South	14-16	1,250	18,600	2	
Barrier 29	2431+50	2459+50	North	14-20	2,800	48,200	26	
Barrier 30	2491+50	2502+50	North	14-16	1,100	16,400	2	
Barrier 31	2554+50	2565+00	South	14-16	1,050	15,500	2	
Barrier 32	2551+00	2562+00	North	14-16	1,100	16,400	1	
Barrier 33	2608+50	2623+00	North	14-16	1,450	21,300	2	
Barrier 34	2611+00	2615+00	South	14-16	400	5,800	1	
Barrier 35	2683+00	2690+00	North	14-16	700	10,000	1	
Barrier 36	2691+00	2697+50	North	14-16	650	9,400	2	
Barrier 37	2772+00	2789+00	North	14-16	1,700	24,300	2	
Barrier 38	2812+50	2816+50	North	14-16	400	5,800	1	
Barrier 39	2809+00	2832+00	South	14-16	2,300	33,400	5	
Barrier 40	2825+00	2839+00	North	14-16	1,400	20,000	2	
TOTALS					37,650	562,100	85	0

TABLE D.3
Noise Barriers Under Consideration – CBA 3

Barrier Name	Begin Station	End Station	Location	Height Range	Length	Sq Feet	No. Sites Protected	No. Sites Benefited
Barrier 1	103+00	107+00	South	10	400	4,000	1	
Barrier 2	137+00	141+00	South	12-14	400	10,400	1	
Barrier 3	152+00	170+00	North	14-16	1,800	25,800	1	
Barrier 4	216+50	256+50	South	12-20	4,000	62,400	4	
Barrier 5	250+50	282+50	North	14-16	3,200	46,800	2	
Barrier 6	264+50	278+50	South	12-14	1,400	19,000	2	
Barrier 7	320+50	336+50	North	12-16	1,600	22,600	1	
Barrier 8	325+50	336+50	South	12-14	1,100	15,000	1	
Barrier 9	344+00	379+00	North	12-16	3,500	49,400	5	
Barrier 10	352+50	367+00	South	12-16	1,450	18,600	2	
Barrier 11	390+00	404+00	North	12-16	1,400	20,000	1	
Barrier 12	419+00	439+00	North	12-16	2,000	28,200	2	
Barrier 13	447+00	455+00	North	12-14	800	10,400	1	
Barrier 14	473+50	478+50	South	12-14	500	6,200	1	
Barrier 15	864+50	874+50	North	12-14	1,000	13,600	1	
Barrier 16	978+50	992+50	North	12-16	1,400	20,000	1	
Barrier 17	1009+50	1014+50	North	12-14	500	6,200	1	
Barrier 18	1019+00	1025+00	South	12-14	600	7,600	1	
Barrier 19	1038+50	1060+00	North	12-14	2,150	30,400	3	
Barrier 20	1069+00	1088+00	South	14-16	1,900	27,000	5	
Barrier 21	1092+50	1097+50	North	12-14	500	6,200	1	
Barrier 22	1114+50	1159+00	South	14-20	4,450	72,100	4	
Barrier 23	1220+00	1248+00	South	12-18	2,800	42,400	2	
Barrier 24	1237+00	1256+00	North	12-14	1,900	26,200	1	
Barrier 25	1304+50	1312+50	South	12-14	800	10,400	1	
Barrier 26	1316+50	1320+50	North	10	400	4,000	1	
Barrier 27	1331+00	1367+50	South	12-14	3,650	49,450	2	
Barrier 28	1359+00	1371+00	North	12-14	1,200	15,400	2	
Barrier 29	1381+50	1387+50	South	12-14	600	7,800	1	
Barrier 30	1420+50	1430+50	North	12-14	1,000	12,800	1	
Barrier 31	1425+50	1446+50	South	12-14	2,100	29,000	1	
Barrier 32	1450+00	1462+00	South	12-14	1,200	15,600	1	
Barrier 33	1492+00	1502+00	South	12-14	1,000	12,800	1	
Barrier 34	1511+50	1547+00	South	12-20	3,550	57,600	5	
Barrier 35	1563+00	1585+00	North	12-18	2,200	29,340	2	
Barrier 36	1568+50	1576+50	South	14-16	800	10,400	1	
Barrier 37	1665+00	1686+00	South	14-16	2,100	30,600	1	
Barrier 38	1816+50	1839+50	North	16-20	2,300	40,800	4	
Barrier 39	1832+00	1846+00	South	12-14	1,400	18,400	2	
Barrier 40	1952+50	1964+50	North	12-14	1,200	15,600	1	
Barrier 41	1965+50	1986+50	North	14-16	2,100	30,600	1	
Barrier 42	1981+00	2002+00	South	14-14	2,100	29,000	1	
Barrier 43	2106+00	2133+00	South	12-16	2,700	39,800	8	
Barrier 44	2113+50	2123+50	North	12-14	1,000	12,800	1	
Barrier 45	2151+50	2174+50	North	16-20	2,300	40,800	4	
Barrier 46	2167+50	2181+50	South	12-14	1,400	18,400	1	
Barrier 47	2212+00	2220+00	North	12-14	800	10,400	1	
Barrier 48	2283+50	2287+50	South	14-16	400	4,000	1	
Barrier 49	2321+00	2353+00	North	16-20	3,200	56,700	18	
Barrier 50	2393+50	2445+50	South	14-20	5,200	88,200	36	
Barrier 51	2413+50	2437+50	North	18-20	2,400	46,200	6	
Barrier 52	2457+50	2469+50	North	18-20	1,200	16,600	2	
Barrier 53	2465+00	2486+00	South	16-18	2,100	34,800	2	
Barrier 54	2515+00	2539+00	South	12-14	2,400	31,400	6	
Barrier 55	2520+50	2541+50	North	16-18	2,100	34,800	3	

TABLE D.3 Noise Barriers Under Consideration – CBA 3								
Barrier Name	Begin Station	End Station	Location	Height Range	Length	Sq Feet	No. Sites Protected	No. Sites Benefited
Barrier 56	2582+50	2588+50	South	12-14	600	7,800	1	
Barrier 57	2580+00	2595+50	North	12-14	1,550	20,750	2	
Barrier 58	2655+50	2675+00	North	12-14	1,950	25,350	4	
Barrier 59	2744+00	2763+00	North	12-14	1,900	25,000	2	
Barrier 60	2781+50	2809+50	South	12-18	2,800	44,000	7	
Barrier 61	2784+00	2789+00	North	12-14	500	6,200	1	
Barrier 62	2800+50	2810+50	North	12-14	1,000	13,600	1	
Barrier 63	2848+50	2871+50	South	16-20	2,300	40,800	1	
TOTALS					110,250	1,628,490	182	0